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[*Authors alone are responsible for the contents of their respective Papers.*]

FIELD-MARSHAL THE RIGHT HON. VISCOUNT WOLSELEY, K.P., G.C.B., G.C.M.G.

GARNET JOSEPH WOLSELEY comes from an old Staffordshire family, and was born at Golden Bridge House, Co. Dublin, on 4th June, 1833. His father was a Major in the 25th (King's Own Borderers), and his grandfather and great-grandfather were soldiers. His first appointment to the Army was in 1852 as ensign in the 12th Foot, but he never joined the regiment and was, within a month, transferred to the 80th in time to earn his first distinction in the Burmese War of 1852-53: he led two storming parties in one day against the stronghold of the robber-chief Myat-toon, and was severely wounded in the thigh. He accompanied the 90th Light Infantry to the Crimea in 1854, and did good work in the trenches as acting engineer until the fall of Sebastopol; he was again prominent in the assault and defence of the Quarries, the attack of 18th June, and sortie of 30th August. He was three times wounded, once so severely that the surgeon passed him over for dead. He emerged from the campaign a captain at twenty-one, with the promise of a brevet majority.

After a short respite, during which he acted as aide-de-camp to Lord William Paulet at Aldershot, he was wrecked in the "Transit" on passage to India. The outbreak of the Sepoy Mutiny soon gave him the opportunity for further distinction with the 90th and in the Quartermaster-General's Department. He was present at the relief of Lucknow, the defence of the Alumbagh by Outram, the siege and capture of Lucknow, and the operations in Oude, Byswarra, Trans-Gogra, and Trans-Raptee. It will suffice to say that his services were six times acknowledged in despatches, and in the subsequent distribution of honours he received the brevet of Lieutenant-Colonel at the age of twenty-six. From India he proceeded direct to China, in 1860, as Deputy-Assistant-Quartermaster-General to Sir Hope Grant. He was present at the assault of the Taku Forts, and in all the engagements throughout the campaign, his services being commended in despatches, and rewarded with a substantive majority.

From 1861 to 1870 he was chiefly employed in Canada. When the Trent affair nearly precipitated this country into war with the United States, he was selected as Assistant-Quartermaster-General to the expedition. While on leave he ran the blockade of the Potomac, and, in a private capacity, accompanied the Confederate Army for a time during

the great Civil War. On his return to Canada he was able to render valuable services during the Fenian risings in 1865-7.

After only eighteen years' service, and at the early age of thirty-four, Colonel Wolseley was entrusted with supreme command of the Red River Expedition of 1870, in the conduct of which he exhibited great aptitude for command, the faculty of organisation, and resource in difficulty. His services were rewarded with the K.C.M.G. and the C.B., but owing to the interest attracted by the Franco-German War, the public never properly appreciated the ability which brought to a successful issue an expedition necessitating a journey of over 600 miles, in inclement weather, through a country destitute of supplies, and entailing continuous labour and fatigue on the troops.

"The exemplary skill with which," to quote the vote of thanks, "he planned, and the distinguished courage, energy, and perseverance with which he conducted" the Ashanti Campaign of 1873-74, were rewarded with the thanks of both Houses of Parliament, a grant of £25,000, promotion to Major-General, ante-dated eight years, "for distinguished conduct in the field," the G C.M.G. and K.C.B., and the offer of a baronetcy which he declined. He also received honorary degrees from the Universities of Oxford and Cambridge, the Freedom of the City of London and a Sword of Honour.

Sir Garnet Wolseley was employed as Inspector-General of Auxiliary Forces in 1874-75, and in 1875-76. In 1876 he was elected to a seat on the Council of India. In his conduct of the Mission to Natal in 1875, and his government of the Island of Cyprus in 1878-79, he exhibited evidence of sound administrative ability. It may not be generally known that when, early in 1878, war between Great Britain and Russia seemed imminent, he was placed under orders as Chief of the Staff to the Expeditionary Army.

In 1879 he was appointed to the Chief Political and Military Command in Natal and the Transvaal with the local rank of General, a capacity in which he restored the prestige of our arms in South Africa. He commanded the troops during the closing operations of the Zulu Campaign, including the capture of Cetewayo, and in the attack on Sekukuni's stronghold. His services were rewarded with the Grand Cross of the Bath.

Sir Garnet Wolseley occupied the post of Quartermaster-General of the Army in 1880-2, and had scarcely taken over the duties of Adjutant-General to the Forces in the latter year when he was appointed to the command of the expedition to Egypt. His brilliant conduct of the campaign, the originality of the plans, and the boldness, dash, and promptness exhibited in their execution, are well known. In the space of twenty-five days the army was disembarked at Ismailia, traversed the desert, seized the capital of Egypt, and captured Arabi, the rebel commander. Within that period it had defeated the enemy five times—finally at Tel-el-Kebir, where their intrenched position was carried after an arduous night march, the guns captured, and their whole rebel army dispersed. For these services Sir Garnet Wolseley received the thanks of both Houses

of Parliament, was granted a pension, and raised to the peerage with the title of Lord Wolseley of Cairo and of Wolseley in the County of Stafford, was promoted to the rank of General "for distinguished service in the field," and received from the notables of Cairo and the Corporation of London valuable swords of honour. On return from Egypt in 1882, Lord Wolseley resumed his duties as Adjutant-General of the Army until appointed to the chief command of the expedition for the relief of General Gordon in 1884-85. His services in that campaign do not require any allusion here beyond the mention that they earned for him the thanks of both Houses of Parliament; the Queen was pleased to raise him to the dignity of a Viscount and appoint him a Knight of the Order of St. Patrick.

Lord Wolseley returned to the office of Adjutant-General in 1885, and remained at the War Office until appointed in 1890 to the command of the forces in Ireland, when he was made a Privy Councillor of that country. On 26th May, 1894, his Lordship was promoted to the rank of Field-Marshal; on 29th March, 1895, he was appointed Colonel of the Royal Horse Guards; and on 1st November last, succeeded H.R.H. the Duke of Cambridge as Commander-in-Chief of the British Army.

Lord Wolseley is an ardent and judicious reformer, who, in the face of considerable prejudice, has been successful in remedying many defects in our military system. When at the War Office, he was able to guide those reforms, introduced by Lord Cardwell and Mr. Childers, which subsequent experience has shown were in the interest of the Army. He is a strong advocate of the territorial system, the evidence of the value of which over the numerical system, if we may quote from the report of the Recruiting Committee of 1892, is "overwhelming." His Lordship has always warmly supported short service in the Army, a system which, under the necessary conditions of modern warfare, permits of rapid expansion for war and the reinforcing of an army in the field by an efficient reserve. Opinions may differ as to the relative merits of the two systems, but Lord Wolseley's views were entirely borne out by the report of the Committee already quoted:—"The whole weight of the evidence has fully sustained the conviction that the question of long service, in the common acceptation of the term, as opposed to short service, is not now open to argument." His Lordship approves of promotion by selection on the ground of merit alone, and is in favour of the re-organisation of the Royal Artillery. He has given practical proof of his interest in the Auxiliary Forces, and of his recognition of their value as a portion of the military resources of the kingdom, by appointing a Militia and a Volunteer officer to his staff. He has been a constant contributor to military literature from the time of his making public his "Narrative of the War with China in 1860," his essay for the Wellington Prize, and the "Soldier's Pocket Book," to his latest work, "The Life of John Churchill, Duke of Marlborough."

Space will not admit of further reference to the present Commander-in-Chief, of whose varied services, bravery, and ability, this memoir is merely an outline.

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SKETCH MAP TO CAPTAIN YOUNGHUSBAND'S PAPER, "CHITRAL CAMPAIGN."

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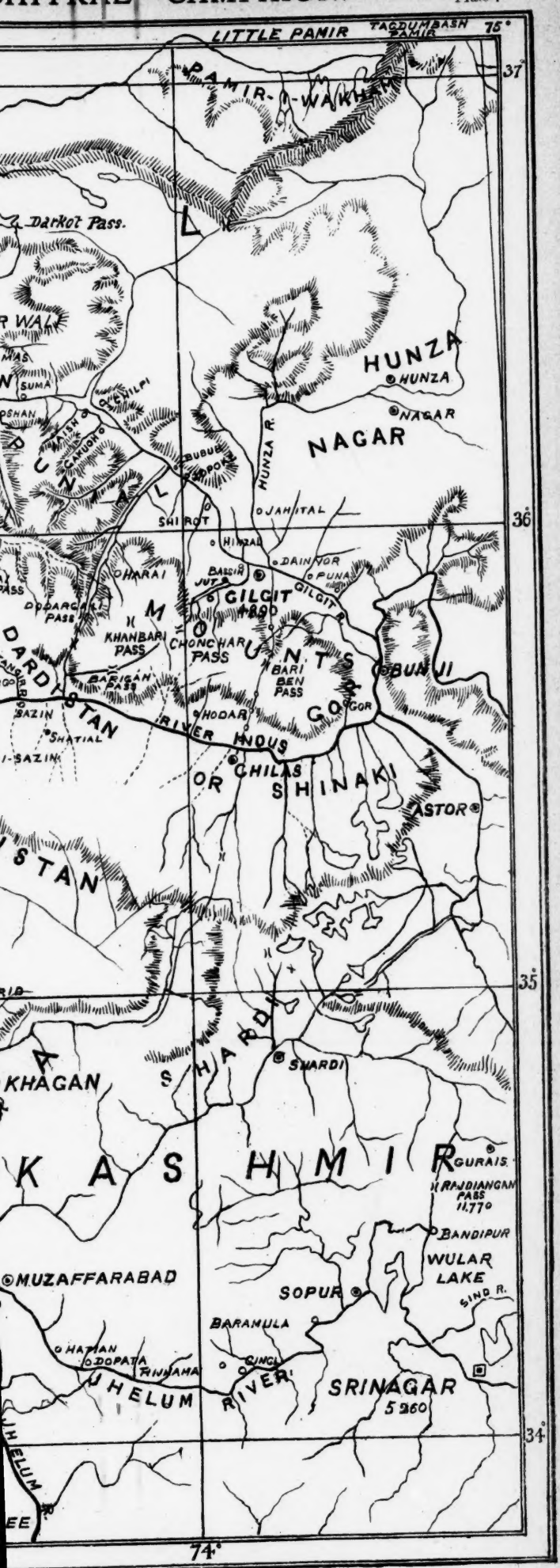
TAIN YOUNGHUSBAND'S PAPER, "CHITR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Wednesday, July 10th, 1895.

Field-Marshal LORD ROBERTS, V.C., G.C.B., G.C.S.I., G.C.I.E., in the Chair.

THE CHITRAL CAMPAIGN.

By Capt. F. E. YOUNGHUSBAND, C.I.E., Indian Staff Corps.

(*Late Political Agent in Chitral.*)

THE present year opened with a startling tragedy, the effect of which, before a quarter of the year was over, was the calling into action of nearly 20,000 British troops. Up to the last day of the closing year the horizon towards the northern frontier of India was perfectly clear. On the first day of the present year a cloud suddenly appeared, which eventually grew till the whole sky was overcast. Then the rain came heavily down, and the storm raged violently for a short space, when the sky cleared once more as rapidly as it became overcast, and now it is nearly clear again.

On January 1st, Nizam-ul-Mulk, the then ruler or Mehtar, as he is called, of Chitral, was murdered by his half-brother. At this time a political agent, on behalf of the Government of India, was in Chitral, and as the Government had intimate relations with the rulers of that country, and as Chitral occupies an important position on the extreme frontier of the Empire, the course which events would take then was regarded with anxiety and watchfulness. Lieutenant Gurdon was the officer in political charge at the time, and to him on the day after the murder young Amir-ul-Mulk, the boy who had murdered the Mehtar, came and begged to be recognised by the agent of the Government of India as ruler of Chitral. To this request Lieutenant Gurdon could give no definite answer, but could only inform the prince that he would refer the matter to his official superiors. The position on the frontier was at this period as follows: Lieutenant Gurdon had with him in Chitral only eight men of his full escort of a hundred, which were stationed at Mastuj, the headquarters of the agency in Chitral. Mastuj is about 65 miles north of Chitral towards Gilgit, nearer which latter place, by some 92 miles, that is, 157 from Chitral, there was a fortified post at Gupis, occupied by 250 men. Gilgit, 220 miles from Chitral, is the headquarters of the agent of the Government of India in political charge of the whole of this frontier from the valley of Kashmir to the borders of Afghanistan; and it is also the headquarters of the force of 1,000 British Indian troops, and 2,000 Kashmir Imperial Service troops, who are stationed on this frontier for its protection.

Lieutenant Gurdon being merely on tour, with only eight Sikhs for an escort, his first care was to summon fifty more from Mastuj to more efficiently guard him in the troubles which might be expected to follow the certainly common, but for all that, disturbing, event of the murder of a Mehtar. Afterwards, when Mr. Robertson, the agent at Gilgit, heard of what had occurred, he, foreseeing that Lieutenant Gurdon's position might at any time become critical, ordered still further reinforcements to move to Chitral; and immediately on receipt of news proceeded there himself, arriving on January 30th with an escort of 180 men, which was subsequently increased by the arrival of another 100, and together with Lieutenant Gurdon's fifty-eight gave a total strength of 338.

Meanwhile, a Pathan chief, named Umra Khan, who ruled the country bordering Chitral and the south, had invaded Chitral territory, and was investing Kila Drosh, an important frontier post. This place soon after Mr. Robertson's arrival fell into the enemy's hands, and in the middle of February, Sher Afzul—a claimant to the throne of Chitral—arrived from Kabul, where he had for some time been detained by the Amir, and joining hands with Umra Khan succeeded in raising the Chitralis against the British officers. Day by day the storm grew blacker and blacker, one chief after another joined Sher Afzul; finally, an advance was made by him on to Chitral itself, and on March 3rd he reached that place.

Captain Colin Campbell, of the Central India Horse, who was in command of Mr. Robertson's escort, hearing of Sher Afzul's arrival, went out on the same day with a strong reconnoitring party to ascertain the strength and whereabouts of the enemy. They found the enemy in great strength, some hundreds of them were armed with Martini-Henry and Snider rifles, and in the action which ensued the British party suffered very severely; its strength was 200 men, of whom 150 were actually engaged, and out of those 150 Captain Baird, a Kashmir general, and a Kashmir major and twenty-two non-commissioned officers and sepoys were killed, and Captain Campbell, a native officer, and twenty-eight non-commissioned officers and sepoys were wounded. A bright spot in this unfortunate action was, however, the extraordinary gallantry displayed by Surgeon-Captain Whitchurch. In leading a flanking attack upon the enemy's position, Captain Baird had been severely wounded in the abdomen. He was left with three sepoys to look after him, and Dr. Whitchurch subsequently reached him. By this time, however, the troops were retiring into the fort again, and the enemy having become elated at their success were firing from every house and garden wall upon them. When the troops arrived within the walls of the fort once more, they found Captain Baird and Surgeon-Captain Whitchurch missing; but soon after, Dr. Whitchurch was seen staggering along towards the door of the fort, supporting and lifting poor Baird along. It then appeared that he had collected together a dozen sepoys from among the retiring troops, and with these as an escort had made his way for fully three miles through the midst of the enemy back to the fort. At places he had to lay down the wounded officer

and with the sepoys charge the enemy behind walls to clear a way. It was some time after dark that he reached the fort, and just before they had once more arrived in safety and almost under the walls of the fort, poor Baird was wounded for a third time. Captain Baird died of his wounds on the following morning, and the Service lost an officer of exceptional ability, tact, and experience, who was deeply mourned by all who knew him.

The British force, which was now closely besieged in the fort, consisted of six British officers, ninety-nine of the 14th Sikhs, and 301 of the 4th Kashmir Rifles. In addition to these there were fifty-two Chitralis, sixteen Punyali levies, and a number of servants and followers, which made the total number of men within the fort 543. The British officers were:—Surgeon-Major Robertson, in political charge; Captain Campbell, severely wounded and unable to perform any duty; Captain C. V. Townshend, in military command; Surgeon-Captain Whitchurch, in Medical charge; Lieutenant B. E. M. Gurdon, political agent in Chitral, but for the defence of the fort employed on military duty, and Lieutenant H. K. Harley, in command of the detachment of the 14th Sikhs. The fort is 80 yards square, with walls 25 feet high and 8 or 9 feet thick, and five towers from 25 to 30 feet higher still above them. It is built of stones held together within a frame-work of wood. No cement is used to give stability, and the wooden framework is necessary to keep the wall up. This fort is situated 40 or 50 yards from the edge of the Chitral river, and from that river the water has to be obtained. It is commanded on one side from a distance of from 400 to 500 yards, and from two other directions at ranges of from 700 yards upwards. This was the fort which Captain Townshend was now called upon to defend, and before describing how he so successfully accomplished this duty I must relate the events which were taking place elsewhere.

The Government of India had, during the progress of the events which led up to the siege of Chitral, become week by week increasingly anxious regarding the state of affairs on the northern frontier. Reinforcements were pushed forward towards Chitral from Gilgit, but when it was seen that Umra Khan had succeeded in his invasion of Chitral, that Sher Afzul had joined him and that the whole of Lower Chitral was rising against the British, the Government recognised that more troops than could be sent from Gilgit would be required to quell the disturbance, and restore the authority of their representative in Chitral, and that a well-organised expedition must be despatched from the Peshawur direction. It was impossible to send additional troops to Gilgit, for that place was cut off by snowy passes during these winter and spring months from the plains of the Punjab; besides which, even if troops could be sent to Gilgit, they would still be 220 miles from Chitral, whereas Peshawur or Nowshera are only 190 miles from that place. So in spite of the risks of opposition which might be expected from the warlike tribes who inhabit the country along this shorter route from Nowshera to Chitral, it was decided to send the relief force by it. A disaster which befell a detachment of seventy-one men which was marching from Gilgit to Chitral under Captain Ross, and

in which he and fifty-four men were killed, the destruction of another party under Lieutenants Edwardes and Fowler, and the treacherous capture of those two officers by the Chitralis, only confirmed the Government of India in their decision; and on the evening of March 14th telegraphic orders were issued for the mobilisation of a division of the Punjab Army to operate against Umra Khan, and effect the relief of the British garrison shut up in Chitral.

It is well known that for some years past, from the time when Lord Dufferin was Viceroy of India and Lord Roberts was Commander-in-Chief, a scheme of mobilisation of the Army in India had been elaborated under the direction of those high officers, and of General Chesney, the Member of Council at the head of the Military Department. This scheme had been further elaborated under the present Commander-in-Chief in India and Sir Henry Brackenbury, the successor of General Chesney. It had, however, never been tested by actual practice till the present occasion gave an opportunity for doing so; and as the result of the mobilisation was decidedly satisfactory, and demonstrated the high state of efficiency of the Indian Army Administration, it may be interesting to enter into the working out of it in some detail.

The 1st Division was the one selected, but the normal arrangements had to be modified, owing to certain circumstances. Firstly, the Waziristan Expedition had not yet been brought to a close, and on that over 10,000 men were employed, including some regiments of the 1st Division. Secondly, a certain amount of the transport of the 1st Division (3,130 Government mules, 225 Government camels, and 4,154 hired camels) was being utilised with the Waziristan Expedition. Thirdly, some of the cavalry and artillery of the 1st Division were not required for the relief of Chitral. For these reasons the normal scheme had to be departed from, but the result showed the elasticity of the mobilisation arrangement; and though alterations—the chief of which were (1) the substitution of corps, (2) the substitution of transport, (3) the compilation of an entirely new railway programme—were required, yet in spite of these departures from the regular scheme, and of the fact that the base had to be shifted from Peshawur to Nowshera, thus entailing difficulties which would not otherwise have been experienced, the troops were able to concentrate so as to advance on the precise date named, April 1st; and on April 3rd what proved to be the decisive action of the campaign was won. The practical carrying out of this scheme of mobilisation devolved upon Major-General Stedman, the Quartermaster-General in India, Colonel E. R. Elles, and Captain Kemball, the latter officer having himself previously drawn up the scheme. It was, as I have said, on March 14th that the Viceroy in Council decided that an advance into Bajaur should be made, and telegraphic orders were issued to General Officers Commanding Districts that the 1st Division of all arms and the line of communication troops attached to it would be mobilised, with the exception of the Staff of the Cavalry Brigade, B Battery Royal Horse Artillery, 11th Hussars, 9th Bengal Lancers, the 15th and 50th Field Batteries, the Ammunition Column, No. 12 Company Eastern Division

Royal Artillery, and the two guns of the Derajat Mountain Battery then with the Kurram escort; that no Imperial Service troops were to be mobilised, but that the following additional units would be mobilised and substitutions made:—Hazara Mountain Battery, 2nd Battalion for the 1st Battalion 4th Gurkhas, 13th Bengal Infantry for 1st Battalion 5th Gurkhas, 29th Punjab Infantry for 2nd Punjab Infantry, Nos. 4 and 6 Companies Bengal Sappers for No. 5 Company Bengal Sappers and No. 3 Company Madras Sappers; and that all necessary action was to be taken, but no movement of corps to take place till further orders. It was the intention of the military authorities to collect all transport and supplies at the base, but not to concentrate the troops there till the latest possible date.

Thus altered, the Division for mobilisation consisted of:—

FIRST INFANTRY BRIGADE.

1st Battalion King's Royal Rifle Corps
1st ,, Bedfordshire Regiment
15th (Sikh) Bengal Infantry
37th (Dogra) Bengal Infantry

SECOND INFANTRY BRIGADE.

1st Battalion Gordon Highlanders
2nd ,, King's Own Scottish Borderers
4th Sikh Infantry
Guides Infantry

THIRD INFANTRY BRIGADE.

2nd Battalion Seaforth Highlanders
1st ,, East Kent Regiment
25th (Punjab) Bengal Infantry
2nd Battalion 4th Gurkha Rifles

DIVISIONAL TROOPS.

Guides Cavalry
11th Bengal Lancers
13th Bengal Infantry
25th Pioneers
No. 15 Field Battery Royal Artillery
,, 3 Mountain Battery Royal Artillery
,, 8 ,, ,, ,, ,,
,, 4 (Hazara) Mountain Battery
,, 1 Company Bengal Sappers and Miners
,, 4 ,, ,, ,,
,, 6 ,, ,, ,,
Engineer Field Park

LINE OF COMMUNICATION TROOPS.

1st Battalion East Lancashire Regiment
29th (Punjab) Bengal Infantry
30th (Punjab) ,, ,,
No. 2 (Derajat) Mountain Battery, 4 guns

To replace these troops other regiments were ordered up from the interior of India, one battalion of British and one of native infantry to Peshawur, six companies native infantry to Kohat, wing of a British infantry regiment to Ferozepore, half a battalion of native infantry and a regiment of native cavalry to Hoti Mardan, half a battalion native infantry to Nowshera, and a mountain battery to Abbottabad.

As soon as the orders for mobilisation were issued, supplies and transport were collected at Nowshera with every possible rapidity. Arrangements were made for the collection of fifteen days' supplies during the concentrative period and forty-five days' reserve. No wheeled transport could be used in the theatre of operations, so camels were hired and purchased in place of the carts which would otherwise have been employed. Except by the staff and hospitals no tents were to be taken, and the troops were to be equipped on light field service. Officers were to be allowed one mule for three officers, British and native soldiers 16 lbs. of baggage, and followers 10 lbs. each.

In view of the possibility of a lightly-equipped brigade being despatched from the force to open up communication with the Political Agent in Chitral, a scheme was drawn up for its equipment, and arrangements made for its rapid movement. The strength of the brigade was detailed as follows:—

	British Officers.	Native Officers.	Warrant Officers, etc.	British Rank and File.	Native Rank and File.	Public Followers.	Private Followers.	Chargers and Ponies.	Transport Followers.
Brigade Staff	7	—	8	—	—	6	30	15	7
Two Battalions British Infantry	58	—	16	1590	—	94	30	6	178
,, ,, Native ,,	18	32	2	—	1442	106	34	6	132
One Battery Mountain Artillery	5	3	1	—	231	66	8	2	4
,, Company Sappers & Miners	4	3	1	2	169	18	7	2	60
,, British Field Hospital ...	5	—	10	4	—	195	16	3	150
,, Native ,, ,, ...	4	—	8	—	13	153	14	3	141
Total	101	38	46	1596	1855	638	139	37	672

The brigade was to be equipped with mules, the number of which, including those required for the carriage of supplies for twenty days for the men, and of grain for five days for the animals, was estimated as under:—

CARRIAGE OF BAGGAGE, EQUIPMENT, ETC.

Brigade Staff	17
Two Battalions of British Infantry	452
,, ,, of Native ,, ...	338
One Native Mountain Battery	11
,, Company Sappers and Miners	105
,, British Field Hospital	244
,, Native ,, ,, ...	216
Commissariat and Transport Departmental Stores	26
	1409

Supplies for 20 days—	lbs.
1,724 European troops, at 3½ lbs. per diem..	120,680
1,912 Native „ „ 2½ „ „ ..	95,600
1,521 Followers „ „ 2 „ „ ..	60,840
	277,120
Add 10 per cent. for wastage, etc.	27,712
	304,832

The mules were to carry 160 lbs. each, of which 17 lbs. per mule had to be deducted for supplies and baggage of transport establishments, so that with each mule carrying 143 lbs., for the carriage of the above 304,382 lbs. of supplies 2,132, or with an allowance of 10 per cent. spare, 2,345 mules were required.

Grain for 5 days—	
24 Chargers at 8 lbs.	960
13 Ponies „ 5 „	325
138 Ordnance mules, at 6 lbs.	4,140
956 1st class mules „ 6 „	28,680
2,870 2nd class mules „ 5 „	71,750
	105,855

For the carriage of this only 128 lbs. per mule could be allowed, as 25 lbs. of grain for each animal, 3½ lbs. for share of driver's kit and 3½ lbs. of driver's food had to be deducted from the allowance of 160 lbs. per mule; so that 827 mules, or with an allowance of 10 per cent. spare, 910 were required for the carriage of this grain.

March 26th was fixed for the commencement of the railway concentration of the troops which, as will be remembered, was to be effected, so as to enable the troops to move forward on April 1st.

The following movements of corps by road were also effected :—

Corps.	From	To
37th Dogras	Kohat	Peshawur
4th Sikh Infantry	Edwardesabad...	Hoti Mardan
15th Field Battery	Campbellpore ...	Nowshera
No. 3 Mountain Battery	Rawal Pindi ...	Nowshera
No. 4 (Hazara) Mountain Battery ...	Abbottabad ...	Nowshera
No. 2 (Derajat) Mountain Battery ...	Kohat	Nowshera
9th Bengal Lancers	Rawal Pindi ...	Hoti Mardan
No. 7 Mountain Battery	Rawal Pindi ...	Abbottabad

The concentration of the division for active service was duly completed by March 31st, and on April 1st the advance was commenced. The following table shows the amount of transport which at that time had been obtained :—

(*a*) Hired animals—

6,268 camels
1,886 mules
2,511 pack bullocks
827 donkeys

(*b*) Animals purchased—
388 mules
1,372 ponies

(*c*) Animals permanently on Government establishment—
7,482 mules

Total	6,268	camels
	9,756	mules
	2,511	bullocks
	827	donkeys
	1,372	ponies
	20,734	animals of all kinds

For the carriage of the equipment of the troops at the normal scale in round numbers 4,000 mules and 3,000 camels were required, leaving about 3,200 camels, and 10,400 other pack animals, representing a carrying capacity of about 3,000,000 lbs. for the carriage of supplies; the food supplies necessary for the force being estimated roughly at 80,000 lbs. a day. Sufficient transport for the carriage of about thirty-seven days' food supplies, in addition to the equipment of the force, had, therefore, at this time been collected. It may be remarked that all pack animals are engaged in the carrying trade of the country, and are often a long distance from collecting centres, and that it is where there are fewest railways that most animals are working.

The names of officers who would be detailed for the duty of purchasing and hiring transport animals is permanently registered, and on the order for mobilisation being given these officers were at once despatched to the various districts to carry out this work; the actual work of collecting the animals falling, however, mostly on the civil authorities.

But besides the division for active service, arrangements were made for the formation of two reserve brigades, and a movable column. The first reserve brigade consisted of one battalion of British infantry, three battalions of native infantry, and one battery of mountain artillery. The second reserve brigade consisted of one battalion of British infantry, two battalions of native infantry, and one battery of mountain artillery. The point of assembly of these was fixed at Rawal Pindi. The movable column consisted of two battalions of native infantry, and one battery of mountain artillery. It assembled at Abbottabad. In addition to these, the original division was strengthened by one pioneer regiment, one company of sappers and miners, and a pontoon train. The first reserve brigade, with the exception of the battalion of British infantry, was moved to Hoti Mardan on April 16th, and following days. But the second reserve brigade was never mobilised.

Time will not allow of my giving any detailed description of the conduct of this campaign. In an hour's lecture it is only possible to describe the salient features of it. Of these features, one of the most prominent was the action at the Malakand Pass which took place on April 3rd, on the third day after General Low's division had commenced

its march. Nowshera, the base of operations of this division, is situated in the plains, and for the first 40 miles the road passes over this plain. But out of this plain rises abruptly a range of rugged, bare-looking hills, from 5,000 to 6,000 feet above it. Beyond this, in the direction of Chitral, other tiers of hills may be seen rising behind it, and over it leads the Malakand Pass. For years this range had confronted our frontier officers, but only one Englishman had ever crossed it. What it was like; what the country on the other side was like; what the tribes who inhabit that country would do, were all matters for conjecture to the British force as they marched across the plains towards these rugged, hilly barriers. The general impression, however, was that the country was most difficult and inhospitable, and that the tribes were united as one man to oppose the advance of the British to the bitterest end. These gloomy forecasts, fortunately, however, proved to be untrue. Much of the country was found to be difficult, but a great deal of it proved to be so open and easy that cavalry were brought on and used with great effect. It turned out too that with a quick, sharp blow the opposition of the tribes collapsed almost completely, and the officers of Sir Robert Low's force now speak of these combinations of tribes as resembling a bubble, which has only to be pricked to burst and show how empty it is inside. From a distance, however, this bubble looked very imposing; and till the action at the Malakand Pass was fought, nobody could be sure whether there was nothing but air inside, or whether it was solid all through.

The result of this first action was watched for, therefore, with deep interest. On the evening of April 2nd the troops had reached the foot of the hill, and on the morning of the 3rd the action commenced. Brigadier-General Blood had reconnoitred the enemy's position on the previous evening, and the attack was entrusted to General Waterfield's Brigade. The enemy were occupying a rocky ridge, with steep, broken sides, which were covered with low bushes and coarse scrub. This ridge was nearly 5,000 feet above the plain,and it was crowned with sungars or stone breastworks. From a distance this ridge does not strike the observer as being particularly difficult, but when one comes to actually climb it one finds it necessary to use arms as well as legs, and General Waterfield's troops in ascending it had to help each other up one by one all along the hill-side. The regiments to whom fell this task were of the finest in the British Army, which has no better regiments than the King's Own Borderers and the Gordon Highlanders, and in the Native Army of India it would be hard to find a regiment which could beat the Guides and the 4th Sikhs. For five hours these troops ascended the rocky sides of the Malakand ridge, while the guns and Maxims played on the enemy's sungars from a range of first 2,300 yards, and afterwards 1,500 yards. The enemy were driven from sungar to sungar, and finally fled precipitately. The Malakand Pass—the chief defensive position of the enemy—was occupied, and as it proved the decisive action of the campaign, won with the loss of seventy killed and wounded. The enemy's loss was put down at 500 killed, and it was computed that there

must have been about 12,000 men engaged, of whom between 3,000 and 4,000 carried firearms.

On the following day the troops marched into the Swat Valley, which was found to be not narrow and enclosed as so many of these valleys among the frontier hills are, but wide, open, and well cultivated. It is from two to four miles in width, flat enough for cavalry to be used on it effectively, and cultivated with scarcely a break along its course. On the 4th and 5th April there were skirmishes with the enemy, in which the cavalry played an important and useful part, and deeply impressed and awed these wild tribesmen, who had never encountered anything of the kind before. General Low then moved into the valley of the Panjkora River, where was fought what the Commander-in-Chief in India told me was about the finest action he had heard of in his time, but which I can merely refer to here. I allude to the Guides' fight, when Colonel Battye, in command of his battalion, had to hold his own against a force of the enemy, estimated at 4,000 men, with the bridge over the Panjkora carried away in his rear. Though the enemy charged right up on to the bayonets of the Guides, they retired on to the bridge head with the utmost steadiness, as if on parade. Colonel Battye himself was killed, but the enemy were kept in check till reinforcements could be crossed over the river, and far from gaining the advantage they ought to have gained from so unfortunate a circumstance as the breaking of the bridge, they suffered a loss of over 500 men.

After this General Low moved towards Umra Khan's chief fort at Munda. A skirmish took place on the 17th April, but when on the following morning the two leading brigades marched out all prepared for what would have been the principal fight of the campaign, it was found that Umra Khan had fled in the night, and his fort was occupied without opposition.

All this time no very certain information of what was occurring in Chitral had been received. It was known that Captain Townshend was shut up there with supplies till the end of April, but as to how the garrison were faring not a scrap of news could be obtained. Now, however, that Umra Khan's opposition had completely broken down, Sir Robert Low decided upon sending General Gatacre's Brigade on rapidly to Chitral. At the same time the Chief of Dir—a state lying next to Chitral, which had been absorbed by Umra Khan—anxious to make the most of the present opportunity for reinstating himself, had thrown in his lot with the British, and sent on large numbers of his men towards Chitral to relieve the pressure on the garrison there. While General Gatacre was pushing on in this way, news from Chitral was at last received, but it was of the most disquieting description. The enemy had made a mine to within 10 feet of the walls of the fort. The crisis was daily expected, and the question was whether the garrison would be able to hold their own against the attacks being made upon them. On receipt of this intelligence Sir R. Low ordered General Gatacre to move on without delay with 500 men, and a couple of guns. But on the following day, the welcome news was received that the siege had been abandoned, and that the enemy

were in full flight from Chitral. On April 21st letters were at last received from Mr. Robertson, and all doubt as to the fate of the garrison was at an end.

I now resume the account of what was taking place in the fort at Chitral. At the point I had reached, the garrison, after a severe fight, had been shut up within the fort and the siege had commenced. Captain Townshend was now in command, and in his military duties was assisted by Lieutenants Gurdon and Harley. These three officers divided the day into watches as on board ship, going on duty for four hours each. Captain Townshend's first care was to demolish as many as possible of the out-buildings which surrounded the fort, but, unfortunately, he had no time to demolish a building known as the summer-house, which is situated only 40 yards distant from the south-eastern corner of the fort; and as the enemy promptly occupied this, the difficulties of the garrison were immensely increased. A garden, too, which ran out from the east face of the fort, was occupied by the enemy, and from the walls of this and the summer-house a deadly fire was kept up on the loopholes of the fort, so that it became practically impossible for the defenders to put a rifle through any loophole which had not been reduced to the narrowest possible dimensions. Among the besiegers were some hundreds of Umra Khan's men, who were perfect adepts in the art of besieging. Their native country, Bajaur, is dotted over with forts of precisely the same description as that at Chitral. Umra Khan has for years been occupying his leisure moments in besieging these forts, and consequently his men are thoroughly versed in every trick and artifice of the trade. Their attention was at once directed towards the water supply. If they could cut that off the defenders would have to give in, as no water is procurable inside the fort. On the second day of the siege, after constructing a line of sungars opposite it, they attacked the water-tower by the river, and actually succeeded in penetrating it and lighting a fire inside. On this, as on many other occasions upon which an attack was delivered, they made a feint upon some other point to distract the attention of the defenders from the main advance. Both real and feint attacks were, however, unsuccessful; and they only served to emphasise to the besiegers what they had already recognised—the supreme importance of guarding the waterway and taking precautions against fire. Captain Townshend, therefore, told off special fire-piquets and set to work at the construction of a covered way down to the water. As the enemy attacked at night, too, it became very important to devise some means of lighting up the ground immediately round the walls, and for this purpose fireballs soaked in kerosine oil were first made up to throw over them; but afterwards a better arrangement was thought of, platforms were built out from the walls, and on these platforms fires were kept alight the whole night through, so that no one could approach the walls without being seen. On March 14th, another attack was made upon the water-tower, but again unsuccessfully. A few days later the garrison were disheartened by the news that two British officers, Lieutenants Edwardes and Fowler, who had been advancing

to Chitral with reserve ammunition and engineer stores had been treacherously taken prisoners, their men cut up, and their stores captured. The defenders heard, too, of the disaster which had befallen another party under Captain Ross, when that officer was killed, and fifty-six out of his party of seventy men had been killed. Such discouraging information the enemy were particularly careful to let the defenders hear of, but they took the very greatest care to prevent any good news from outside reaching the garrison, and till the siege was raised the British officers had no news whatever that a force was advancing from either the Gilgit or the Peshawur direction. Perhaps of all the devices of the besiegers, this one of playing upon the feelings of the defenders was the most refined and might have been the most effectual, for it must be remembered that three-fourths of the garrison were untried Kashmir troops, and Kashmir troops before they were taken in hand by British officers had not enjoyed a high reputation on this frontier. According to established custom in these parts, the garrison ought to have surrendered when they found themselves surrounded by far superior numbers and attacked with the determination and persistence with which Umra Khan's men attacked the Chitral Fort, and when they had no news that relief from outside was approaching. It was the proper thing to do to surrender, and Umra Khan's general was careful to remind the British officers that Umra Khan always treated his prisoners well. The Pathan did not consider, therefore, that the besiegers were playing the game properly when, in spite of attack after attack; in spite of short rations; in spite of the discouraging effect of the two disasters which had befallen British detachments on their way from Gilgit; in spite of their having no information of relief approaching them from either Gilgit or any other direction, they still persevered on in their defence and showed never a sign of giving in. This was against all customs of war among these tribes, and was looked upon very unfavourably by them.

The defenders stuck doggedly on their fort. On March 29th they hoisted a Union Jack, which they had manufactured in the fort, and the sight of it flying over them inspired them with fresh courage. The staunch Sikhs pulled themselves together for the hardest part of the struggle. The smouldering fire was just beginning to stir within them. There was something really worth fighting for now, and the longer the siege lasted the more enthusiasm they showed, as they realised that the struggle was one worthy of them.

Similarly, the besiegers increased rather than diminished their activity. By April 6th they had advanced parallels to a point only 30 yards from the main gate; and in the following morning, while still dark, they made a double attack, one to fire the south-east tower and the other upon the water tower. Both attacks failed, but the enemy succeeded in setting fire to the south-east tower, and it was only with great difficulty, and after Mr. Robertson had been wounded in working to put the fire out, that it was extinguished. On April 11th, another attack was made upon the water tower, and this likewise failed.

The siege was now reaching its critical point. Though the defenders

had no inkling of it, the besiegers were well aware that General Low's force had won its first fight at the Malakand Pass, and was advancing irresistibly upon Chitral. They knew, too, that another force under Kelly was advancing from Gilgit, and was now only a few marches from Chitral. They felt convinced that the surrender of the garrison could not now be much longer delayed. Each day they expected the message of surrender to come in. On each fresh attack they expected to see the defence broken down. They, therefore, gathered themselves together for one final effort. They prepared huge scaling ladders, and a gigantic pent roof to prop against the walls of the fort; and they excavated a mine from the summer-house towards the south-east corner of the fort. On April 17th the attention of Captain Townshend was drawn towards the suspicious amount of music and noise which was constantly kept up in the summer-house. It was surmised that this might be done to drown the noise of picking in a mine. Sentries were specially warned to listen, and it was found that this really was the case. The sound of picks could be heard within a dozen feet of the walls. There was no time to dig a counter mine. The only plan to counteract the danger was to sally out, and blow up the mouth of the mine. Captain Townshend accordingly ordered Lieutenant Harley with forty men of the 14th Sikhs and sixty of the Kashmir Rifles for this duty. Lieutenant Harley was brilliantly successful. He dashed out at the head of his men, surprised the enemy in the summer-house, forced them to evacuate it, and blew up the mine. Harley's loss was eight men killed, and thirteen wounded—a loss which sufficiently testifies to the severity of the fighting; but a great danger had been averted, and the enemy had been taught that the defenders, far from being cowed, had now, forty-five days after the commencement of the siege, spirit enough left in them still to assume a vigorous offensive.

The last effort of the enemy had now been made; some of their bolder spirits wished to make yet one more attack upon the fort, but the majority were now broken-spirited. They said they could deal with most troops, but the long-haired Sikhs were more than they dared to face. From Gilgit and from Nowshera British forces were rapidly closing on them, and on the night of April 18th Sher Afzul's and Umra Khan's force quietly withdrew from Chitral, and this memorable siege was at an end. On the morning of the 19th the garrison cautiously came out of the fort, and on the 20th Colonel Kelly's force from Gilgit marched into Chitral. They found the officers and men of the garrison pale and wan, and very quiet, as men are who have undergone what they had; but they were still resolute and confident, and prepared, if need had been, to have defended their post to the last and bitter end.

The force which now arrived in Chitral and afforded the garrison such timely relief, was one which had been moved up from Gilgit as soon as it was found in how serious a plight the Chitral garrison were. It consisted of 400 men of the 32nd Pioneers, under Captain Borrodaile, with two guns of the Kashmir Mountain Battery, under Lieutenant Stewart, R.A.,

forty Kashmir Sappers and Miners, 100 Hunza, and 50 Punyali levies. The whole was under the command of Colonel Kelly. This force left Gilgit in two detachments on March 23rd and 24th. The task before it was a hard one. Chitral was 220 miles distant, while between it and Gilgit was the Shandur Pass, 12,400 feet high, and at this season of the year deep in snow. The road passed through the most difficult mountainous country, and at nearly every stage along it were positions where, according to all ordinary calculations, an enemy ought to have been able to completely block the way. All the country on the Chitral side of the Shandur Pass was known to be up in arms against the British, and there was no certainty that on the Gilgit side of it also the tribes would not prove hostile.

But in spite of all these difficulties, Colonel Kelly reached his destination without a check from the enemy, and with only a momentary delay on the Shandur Pass. At this Pass he found the snow had been falling continuously for five days previously. But the advance half of the force under Captain Borrodaile struggled over successfully. His men, bred and born in the scorching plains of the Punjab, slept out without shelter on the snow, and rather than leave the guns behind—as had almost become a necessity—themselves volunteered to carry them over. Colonel Kelly joined Captain Borrodaile on the far side of the Pass, and on April 9th, though even then only half the force was over the Pass, attacked the enemy in a strong position and defeated them. The same night Mastuj was reached, and the detachment which had been shut up there for eighteen days was thus relieved. The second half of his force having now come up, Colonel Kelly set out for Chitral on April 13th, and fought on that day a very important and successful action at Nisagol. The position the enemy took up was one of the strongest in the whole country. The Nisagol is a nulla from 250 to 300 feet deep, which runs directly across the main valley of the Chitral River, and bars the way like an immense trench. Just at the point where it joins the Chitral River a rough path, which usually forms the high road to Chitral, has been constructed; but this the enemy had, at the time of Colonel Kelly's advance, completely destroyed. The Chitralis had also erected sungars along the southern edge of the nulla, and upon the hillsides which looked down upon the open country over which Colonel Kelly's force must advance. The Chitralis were many of them armed with Sniders, and there were forty or fifty equally well-armed Pathans with them also.

Colonel Kelly on this occasion adopted the same tactics which had proved so successful in the former engagement. He pounded their sungars with artillery fire and kept up an incessant rifle fire as well, while he sent the levies of mountaineers capable of rapidly clambering over the most precipitous hillsides high up the nulla towards the right flank to turn the sungars on the enemy's left. The guns came into action at 500 and, subsequently, at 300 yards; the Pioneers sent volley after volley into the sungars; and the levies, by going high up towards its source,

succeeded in finding a way across the nulla and turning the enemy's position. The Chitralis fled precipitately from their sungars, which had now become mere death-traps; numbers of them were picked off as they came flying down the hillsides, and, finally, the whole force went off in full retreat. Colonel Kelly in a few hours had driven them from what the late Mehtar of Chitral, standing on this very spot, had told me was one of the most noted positions in his country.

Continuing his march towards Chitral, Colonel Kelly, by keeping along the right bank of the river, outwitted the Chitralis, who had intended to have made one more effort to delay him in the defile near Karak, where Captain Ross's party had been destroyed. Colonel Kelly avoided this defile altogether; he kept high up the hillsides on the right bank till he was past it, and then descending to the river again forded it at a point where it was never known to be fordable, where the water was up to the men's arm-pits and running in a strong stream, so that they had to pass over in bands of ten or a dozen linking arms; and by crossing the river here he came out well on the Chitral side, both of the spot where Captain Ross's party was cut up and of the village where Lieutenants Fowler and Edwardes were treacherously captured.

Colonel Kelly was now, on April 17th, only two marches from Chitral. It was the day of Lieutenant Harley's *sortie*, and the day on which General Low's force was having its last skirmish with Umra Khan. But Colonel Kelly was as ignorant as General Low of what was going on in Chitral, and as the Chitral garrison were of what was occurring outside. On the following day, however, he at last received a letter from Mr. Robertson, and on April 20th marched into Chitral.

This was the closing act in the drama, and when a week later I arrived in Chitral from the opposite side, a few knocked-down walls around the fort were the only traces the country—now smiling in all the freshness of spring—outwardly bore of the desperate struggle which had been raging in it. But upon the inhabitants the traces of the strife were unmistakable. Such people as these studiously seek out the winning side, upon which to range themselves. Sher Afzul and Umra Khan had seemed to be in the ascendant; the British cooped up within a fort, or straggling in weak detachments along impassable defiles, had seemed on the verge of being crushed out of existence. But a few weeks' struggle had shown how false such outward appearances as these had been; and now the Chitralis had realised with awe what the British power really was. They were terrified in thinking of the revenge so great a power must assuredly take upon men who had dared to oppose it; and though this feeling of terror will have worked off now that they have realised that the British do not take cold-blooded revenge upon misguided tribesmen, the impression made by the undaunted defence of the fort at Chitral by six British officers, and by the advance of a few hundred Indian troops over a snowy pass, through the worst defiles, and past their most impregnable positions, into the heart of their country, will have engraved itself deeply upon their memories, and its effect will be felt for many years to come.

The CHAIRMAN: Ladies and gentlemen,—If any gentleman wishes to ask Captain Younghusband any questions, I am sure he will have great pleasure in answering them.

Lieut.-Colonel Lord CREMORNE, Retired (late Coldstream Guards): With your permission, my lord, I should like to venture to say a few words. In view of the possible retention of Chitral as a permanent outpost, may I ask Captain Younghusband what the difficulties or possibilities would be of a road being made up to Chitral from, say, somewhere in the neighbourhood of Peshawar or Nowshera—(I take it that that is a somewhat important point; I do not think Captain Younghusband mentioned it in his lecture)—and especially with regard to the possibilities of such a road being kept open throughout the whole of the year?

Captain YOUNGHUSBAND: In answer to Lord Cremorne, I may say that from Nowshera the first forty miles are over plains, and, of course, perfectly easy, but then you come to the Malakand Pass, and it has been a most fortunate circumstance that at the Malakand Pass it was found that an old Buddhist road existed; it had been cut through the rock some 3,000 years ago, and the rock cutting remains complete to the present day. When General Low's engineers came to make a road through it they had merely to clear out the obstructions which had been put into this rock cutting, and when I passed through it in the middle of May last it was as good a road as you could wish for. It was quite practicable for carts if need be. On the other side of the Malakand Pass you come to the Swat Valley, which is also very easy. You then come to another range, over which an easy pass exists—quite good enough for carts now. Then up the Panjkora River is a difficult bit. General Low's forces did not come up the Panjkora River; they went off to the left in order to fight Umra Khan in his own country. This leads to the Bajaur country. A reconnoitring party went down it, and they found it difficult at present on account of the rocks coming down to the water's edge, but they reported that there would be no special difficulty in making a proper mule road through the country. Then comes the Dir Pass—the Lowri Pass. It is 10,400 feet high, and is covered with snow from about, say, the end of November or the beginning of December to the beginning or the middle of May. That is the chief difficulty, of course; but Umra Khan got some 3,000 men across it this winter in the middle of January, and General Gatacre crossed it on the 25th April this year. It is a pass which can be crossed if need be, therefore, all the year round, although for those six months it has its difficulties. On the other side of the pass there is a more difficult country through the Chitral territory, at places where spurs run close down to the river's edge and block the way, but the greater part leads across alluvial plains, such as you saw in the pictures of Chitral. Of course, the engineer officers of General Low's force, and all the troops, and all the supplies moving along the road have made it very practicable at present as it is. Mules run right through now, and camels are running up to the foot of the Pass of Jowbatai.

Vice-Admiral N. BOWDEN-SMITH: My lords, ladies, and gentlemen,—I was prevented from hearing the first part of this lecture, but I should like to say in a few words with what great pleasure I have listened to the last part of it: a pleasure which, I am sure, will be shared by all who have heard it, and also by those who read the account of it hereafter in the JOURNAL. When I took up my newspaper some weeks ago to read the account of this expedition, or, I suppose I should say expeditions, for the relief of Chitral, I was filled with admiration for my fellow-countrymen out there, and for our fellow subjects—those gallant native troops who, I believe, took such an important part in the expedition. That expedition has not only accomplished the object for which it was sent out, but it has done us good throughout the whole empire; inasmuch as it must have a splendid effect upon every officer and man who reads about it. As a Naval officer, I would ask to be allowed to take this opportunity of offering my

congratulations to your lordship, and to the sister Service, and to Colonel Kelly in particular, for the success of that expedition which was so well planned and executed, and the accounts of which, I am sure, will always occupy a foremost place in the annals of our Indian Empire. (Cheers.)

Chef d'Escadron the Comte PONTAVICE DE HEUSSEY, French Military Attaché, said that he wished to express, in the name of the soldiers of France, the great admiration which the Chitral campaign had excited among them. The position of the British officers in Chitral had been followed with much anxiety by French soldiers, who had studied with great care the preparations made for the relief of the fort. He expressed the highest admiration for the conduct of the whole campaign by the officers in command and for the brave defence of the fort.

The CHAIRMAN: Ladies and gentlemen,—In bringing this lecture to a close, allow me to congratulate you upon having had an opportunity of listening to an account of the Chitral Expedition from the lips of one best qualified to give you a correct version of it, owing to his intimate acquaintance with the, to most of you, quite unknown region, through which the operations were conducted. (Cheers.) Very few Englishmen are so competent, as Captain Younghusband is, to give you not only a true history of the campaign, but to explain to you the strategical value of Chitral. For some time, as he has told you, he was in political charge of the district; he is intimately acquainted with the people of Chitral and their surroundings; he has travelled all over the Pamirs, and explored every pass leading towards India from that direction. Within the last three months Captain Younghusband has re-visited Chitral, and his being able to reach Dir on the eighteenth day after leaving London proves how close the frontier of India is now brought to England. (Cheers.) I trust that my fellow-countrymen will appreciate this fact, and will realise that England now occupies a continental position in Asia, and that her interests in that part of the world must be protected by continental means of defence. Although Chitral is only a small spot on the North-West frontier of India, the decision that may be come to as to our future relations with it is of extreme importance, because on that decision depends the general question of our Indian frontier defence. No one is more ready than I am to admit the great difficulties with which this question is surrounded. They have been face to face with me for many years past, and no one can be more anxious than I am that the question should be carefully and thoroughly considered in all its bearings before any decided action is taken. It is not surprising that most people in this country should be puzzled and in doubt as to the proper course to pursue, or that statesmen should hesitate to come to a decision, when men who have spent the greater part of their lives in India differ so widely in their opinions on this subject. That there should be this divergence of opinion seems to me to be mainly due to the apparent difficulty on the part of some people of appreciating the great change that has come over our position in India of late years, and the important part which the border tribes must inevitably take if there should be serious troubles on the North-West frontier. (Hear, hear.) Should such troubles arise, the attitude of these tribesmen will most assuredly depend upon the decision they may come to as to which side will be victorious, and therefore, which side it will be the most advantageous for them to join. Some men of great experience say that the more we leave the tribesmen alone, the more likely they are to help us in the time of need; but this opinion is not borne out by the account which Captain Younghusband has just given us of the part played by the Swatis and Bajauris at the commencement of the Chitral Expedition. The policy of non-interference was tried with those particular tribes for fifty years without resulting in their assisting us when we were going to the rescue of our soldiers from their perilous position at Chitral. On the contrary, as Captain Younghusband has told you, they did their utmost to thwart us, and they fought desperately against us at the Malakand Pass. Nor

does this opinion tally with that which I and other officers, who have been much on the frontier of late years, think would be the attitude of these tribes, unless they had been made to believe in our strength and in our power to control them. My experience is that the border tribesmen will cast in their lot with whichever side convinces them that they will be victorious, whatever the length and severity of the struggle may be. Ladies and gentlemen, it was this belief in our latent strength which in the first instance induced the natives of Hindustan to assist us to conquer India. It was this belief which induced the people of the Punjab and the trans-Indus districts to stand by us during the dark days of the Mutiny. It was this belief which induced the Hunza-Nagar men to afford such valuable aid to Colonel Kelly during his adventurous march upon Chitral. And it is this same belief which will induce the border tribes to join whichever side convinces them of the inutility of opposition, and of its determination to maintain its supremacy at all hazards. At the commencement of the last Afghan War I had a remarkable instance of the value of a belief in our strength. When the force which I commanded was marching through the Kuram Valley several desertions took place amongst the border men in our ranks, and on the eve of our first fight there were unmistakable signs of treachery; but immediately the fight was over and victory was secured, the loyalty and gallantry of the Pathans could not be exceeded by any of the native soldiers in our ranks. Captain Younghusband has described the wonderful effect which our success had amongst the Chitralis. The belief in our strength was established then, and you may depend upon it that this belief is the most important factor in all our dealings with Orientals; without that belief we could not hope to control the millions over whom we hold sway. With regard to the particular part of the frontier with which Captain Younghusband's lecture treats, it is difficult for one who has not had access to official papers to speak quite confidently, but I should hope that there would be no more difficulty in dealing with it than there has been in other parts of the frontier. There would be no necessity for annexation, nor need there be any interference with the customs and habits of the people; and, if properly managed, no extravagant outlay need be incurred. A fair road would have to be made, with bridges over the Swat and Panjkora Rivers, and fortified outposts for native troops would have to be constructed at Chitral and Dir. While these works were being carried out it would probably be necessary to locate a brigade of troops somewhere in Swat, but as soon as they were completed I should hope it would be possible to keep the road guarded, as the Khyber route is now so successfully guarded, by local levies; and, judging from our experience in other parts of the frontier which have come under our control, trade and cultivation would rapidly increase, and the people would become more contented and less turbulent. (Cheers.) Before I sit down, I am sure you would all wish me to express our great thanks to my gallant friend Comte Pontavice de Heussey for his very graceful words about the army in India. On more than one occasion he has spoken to me of the admiration excited in France by the gallantry of our troops at Chitral, and I can only assure him that he is most welcome here. We are all glad to see him, and we thank him very much for the kind expressions he has made use of. (Cheers.)

Field-Marshal Sir LINTORN SIMMONS: Before your lordship leaves the chair, perhaps I may be allowed to ask the meeting to pass a vote of thanks to your lordship for presiding, and for the very weighty words which your lordship has made use of in speaking of Captain Younghusband's lecture, and of the important interests that we have at stake in the country round Chitral. I am sure that those words have fallen upon ears which must respect them, and I am very much inclined to think that they will have weight in the decision which has to be arrived at with reference to this Chitral frontier. I cannot, for my part, conceive any policy more destructive of English influence in India than retiring from a point where our troops have shown such wonderful gallantry, and where the relief has

been attained with so much trouble and expense, and has done honour to the country by the way in which the troops have performed their duty. (Cheers.) I beg, therefore, to offer to Lord Roberts the sincere thanks of the Institution, and of all here assembled, for presiding at this most interesting lecture. (Cheers.)

The CHAIRMAN: I thank you all, ladies and gentlemen, for the kind manner in which you have responded to the Field-Marshal's proposition. It is a great pleasure to be here to-day. I have known Captain Younghusband for many years; I have been intimately acquainted with the various enterprises he has undertaken, and I know how greatly the Empire has benefited by his explorations—explorations which have been attended with great privations and danger, but which have been carried out most cheerfully and manfully; and any thanks you may give to me ought to be given to Captain Younghusband for the way in which he has done his work. (Cheers.)

Thursday, 28th November, 1895.

Field-Marshal THE VISCOUNT WOLSELEY, K.P., G.C.B., G.C.M.G., Commander-in-Chief, in the Chair.

THE TACTICAL TRAINING OF OFFICERS OF VOLUNTEERS.

By Lieut.-Colonel E. J. A. BALFOUR,
7th Middlesex Rifle Volunteers (London Scottish).

THERE are, I imagine, very few soldiers left who would maintain that a theoretical, as well as a practical, knowledge of minor tactics is unnecessary for junior officers, and (I might add) even for non-commissioned officers. But while none now dares to argue directly against the importance of these requirements, many are found to cast ridicule on the efforts made to attain them. Old prejudices die hard. Thus one still sometimes hears it said in this connection, "What is the use of running before you can walk?" which, being interpreted, means that Volunteers should not concern themselves with tactics, until they have reached a very high standard of proficiency in barrack square drill.

To this I have two observations to make. Firstly, in no other walk of life, with which I am acquainted, is the teaching of the mechanism of a process divorced from the teaching of the application of that mechanism. You set a child to learn five-finger exercises and scales on the piano—that is the mechanism by which the child will be enabled to play a tune. But as soon as the merest rudiments of this mechanism are learnt you teach simultaneously an actual tune. You teach a child how to draw by making him copy certain lines, straight or curved. But side by side with that you give him the representation of some actual object to imitate. You teach a man the use of carving tools. But, at the same time, you teach him the application of these methods in an actual ornamental example. And similarly, I believe, in all actual branches of industry or art. Why, then, should we depart from this universal habit in military matters alone? The direct object of drill is to enable individuals and units to carry out tactical operations. The connection between drill and tactics should, therefore, by all analogy be established, and dwelt upon, from the very commencement. Smartness will not, in consequence, be lost, but intelligence and interest will be stimulated. Who has not observed how often a body of Volunteers, which is perfectly capable of executing a drill movement smartly and accurately in Hyde Park, will bungle that very movement if called upon to carry it out in the middle of a field day. The reason is not far to seek. We are still traditionally under the influence of the "walk before you can run" school. It regards drill purely as an end, not as a means, with the result that drill is still too much taught as if it were the final summit of efficiency. I do not wish

to be misunderstood. I am not an advocate for abating one jot of the most minute accuracy in drill which time will permit of being instilled into Volunteers. They require all that can be given them, and more also. But if more opportunities could be seized of giving such teaching in more direct relation to its tactical application, each lesson would bear better fruit.

But my second observation in reference to this "run before you walk" sarcasm goes deeper. It is a beautiful journalistic phrase, and saves a newspaper reporter a large amount of trouble. Thus, in the criticisms of the work of tactical societies one frequently finds it employed. "What is the use," they say, "of Volunteer colonels learning how to command mixed divisions, or of Volunteer captains practising the leading of brigades?" Now here is a fallacy to expose. I challenge any critic to point to a single instance in which Volunteer officers have been given commands so far above their rank. "But how about your kriegspiels and your war games in the open?" will at once be thrown in my face. "Have we not seen schemes and exercises involving army corps and divisions?" Certainly. But here is the very point of the fallacy. What the war game teaches, whether it be played on a map or in the open, is not the actual command of troops, but the tactical principles on which troops are commanded.

The difference may at first sight appear verbal and superficial. It is in reality vital. Let anyone who doubts this dip haphazard into any military history which gives an insight into *all* that a general and his staff have to do in war; or, better still, let him study such a book as Major Grierson's "Staff Duties in the Field"; and he will at once see that the lessons which war games, whether on maps or in the open, are intended to teach (or, indeed, are capable of teaching), involve but a fractional part of the duties which have to be carried out when the troops exist in the flesh, instead of in the imagination.

But I still seem to hear the "run before you can walk" critic ask, "What is the use of a Volunteer officer learning the principles on which the tactical handling of larger units than he is ever likely to command are based?" I will go the length of saying that the proper understanding of these principles is not only useful, but essential. When we read of a general being badly served, what does it mean? Not, as a rule, that his troops showed cowardice; not, as a rule, that their leaders showed ignorance in the handling of their commands; not, as a rule, that there was disobedience to orders. In nine cases out of ten it means that somewhere in that chain of responsibility, which connects the chief with the smallest unit commander, a situation arose requiring an independent decision, and that the individual responsible for arriving at that decision decided wrong. And if we take up a further link in the chain, we shall find that that individual decided wrong, not because he failed in any direct duty, but because he was incapable of putting himself mentally in the position of his chief—because, in other words, he could not correctly answer the question: "If my chief were here, seeing what I see, and knowing what I know, what would he order me to do?"—in fact,

because he was ignorant of the tactical principles being employed by the general in command for the large unit.

Military history abounds in instances where failure has followed ignorance, and success has been the reward of the knowledge of such tactical principles. Perhaps I may be allowed to recall one case, brought to our notice last year by Colonel Lonsdale Hale, in his lectures on the battle of Beaune-La-Rolande, since it struck me in a very special way at the time. A German captain, who held the south-western outskirts of the village, was under orders not to offer a prolonged resistance to the enemy. When the French attacked, it was evident to him that the situation then existing was not the same as that existing when the order was given. His training enabled him to see beyond the limits of his own command. He understood how his small unit was fitting into the larger mechanism. He deliberately disobeyed his order, and thereby contributed largely to the German success. But before he could venture to do such a thing, how certain must he have been that he was right! What risks he ran if he were wrong! To accept such responsibility a man must be steeped in the knowledge of the accepted principles of the conduct of units larger than his own.

But, indeed, the truth of my contention becomes obvious the moment one begins to consider such extended formations as those of advanced and rear guards, or outposts. How shall the commander of a piquet distribute and place his men intelligently, unless he is familiar with the whole science of outposts in their relation to the larger units? How shall the commander of a flanking party of an advanced guard act with the necessary mixture of boldness and caution unless he clearly realises the formations in which other portions of the advanced guard are moving? And, most prominently in the case of a rear guard, success will depend on its handling being subordinated to the necessities of the main body in retreat.

I fear that I may have dwelt too long on the necessity of junior officers studying tactics both theoretically and practically, and in combating reasoning, which perhaps has no weight with most of my audience. But, believe me, the prejudices that I am endeavouring to remove are still deep-rooted in the minds of a very large number of officers. If you were to obtain the candid opinion of many Regular, and of most Volunteer, officers, you would find that it was to the effect that tactics were necessary for generals and perhaps for colonels, but that drill was all that was required by captains and subalterns. And even those who would not venture to argue in favour of these prejudices, too often reveal in practice the fact that their perspective is bounded by their own command. I believe that if we were to analyse the causes of the mistakes made in manœuvres we should find that a good half arose from the fact that officers will not consider that they must not play a little isolated game by themselves, even if a pretty opportunity presents itself; but that they must in unforeseen circumstances subordinate their action entirely to the expressed intentions of the chief. They are pawns in a great game,

but they are pawns endowed with intelligence and initiative. And this intelligence and initiative must be exercised strictly in accordance with what writers used to call the "rules of war."

Since writing the above, I have come across a passage in one of the *Times* articles on the recent New Forest manœuvres, which puts part of my point so clearly that I venture to quote it.

Dealing with the question as to whether, in a particular circumstance, a certain artillery commander (Brigade Division) should have left his position against previous orders, the military correspondent says:—"Had the officer known the actual state of things on the ridge, he would probably have acted on his own initiative; but he did not know, and this is illustrative of a weak point in our battle-leading, displaying itself over and over again at field days. Officers in command of units temporarily inactive do not keep on the look-out for what is happening, except in their own immediate vicinity, and not always even there. They do not seem to concern themselves with the general course that matters are taking elsewhere, and consequently sometimes let slip a chance of contributing to success by taking the initiative. There is also sometimes manifested a want of co-operation amongst the arms, no one troubling himself to get information as to the purpose of his neighbour's movements, or to give his neighbour reasons for his own."

Having shown then, the necessity for Volunteer officers to master the principles which govern the tactical employment, not only of the units which they command, but also of units higher in the scale of importance, and of other arms than their own, it remains to deal with a system by which this result can best be obtained.

But at the very outset we are met by two serious difficulties, difficulties which unfortunately are inherent in the very essence of the Volunteer system as at present existing. Firstly, no complete tactical training can be given to officers (especially in minor tactics), without their actually handling men in tactical situations; and for this the "requirements for efficiency" furnish few, if any, opportunities. Secondly, to use Volunteer material for the purpose of the elementary instruction of officers in minor tactics, is to knock that material out of shape. If we cannot overcome these obstacles, we must turn them. It is, therefore, worth while to examine closely their nature and extent.

Volunteering is, in two respects, similar to the labours of the Israelites in their efforts to make bricks without straw. The clay we have of good quality and in sufficient abundance; but we lack time to harden it, and money to spend on the more modern appliances for its manufacture. With the financial side of the question I am not to-day concerned, I therefore, put that aside; but for the rest we all know what would be the result if a bricklayer's apprentice were to set himself to erect a structure of half-burnt bricks. Not only would that structure present all the failures of ignorance, but the bricks would be twisted out of shape, and would have to be re-moulded before they could again advance in the process of manufacture. This would not be a very serious evil if time were sufficient for the work. But when there is actually insufficient time

to teach all that must be learnt, to mould, as it were, the bricks into shape and to harden them in correct form, it is worse than folly to permit anything to be done which might interfere with the correct instruction of each individual. In other words, Volunteers should not be used as the material on which experiments in the *elementary* tactical instruction of their officers are to be practised. To lay down this rule is not to belittle the value either of Volunteers or their officers. On the contrary, it implies (what is the truth) that the opportunities which exist require most careful nursing. Indeed, the principle of this rule is already admitted in the instruction of Volunteer officers in drill. Who, in his senses, would expose Volunteers to the tender mercies of a young subaltern at the School of Instruction, in Wellington or Chelsea Barracks, even if time permitted? They would become hopelessly confused between right and wrong in a few hours. Whereas the hard Regular brick, moulded and baked by a long systematic course of drill, can stand without injury this (at times) somewhat startling experience. The first conclusion, then, that we must draw is this:—The *earlier* stages of the training of officers of Volunteers in tactics must be conducted either without men, or, if actual troops are employed, they must be beyond the reach of injury from the faults and blunders made by the student.

But, it may be said, why not obtain the desired result by insisting that all Volunteer officers should pass the examination in tactics laid down for their respective ranks? It is neither my desire, nor my intention, to minimise the value of these tactical examinations. I regard them, on the contrary, as not only valuable, but essential, especially, if I may say so without impertinence, in the more practical form which they have assumed under the more recent examiners. In the battalion which I have the honour to command it is expected that as soon as officers have passed through the school of instruction in drill they shall enter on a course of instruction leading up to the passing of the examination in tactics. But there is nothing to be lost, in fact, a great deal is to be gained, by clearly setting before ourselves the limitations of the value of this, and of all other methods of instruction. To what point of efficiency will it take the man of average intelligence and average imagination? Would a Volunteer brigadier be justified in selecting, for a special detached duty in the field, Captain X or Lieutenant Y, simply because he has a (t) opposite to his name in the Army List?

The answers to these questions require careful consideration. The subject of tactics is many sided. In its complete form it involves knowledge of map reading, ballistics, elementary woodcraft, a little astronomy, some engineering, a quantity of military statistics, field fortification—besides, of course, those dispositions of troops of the three arms, regarded as orthodox by consensus of experience in various typical circumstances. But, in addition to these matters, most of which can be, to a considerable extent at least, mastered by the study of books, other elements no less important are essential for the successful practice of tactical principles. The most important of these may, I think, be best grouped under a general heading of "sporting instinct." I know of no

sport worthy of the name in which the science of tactics does not play an important part. And no one can be said to be a good sportsman until the application of the tactical principles of that sport has become largely instinctive. For these two reasons I have chosen the expression "sporting instinct." Now, whether it is cricket, football, or golf; hunting, shooting, or fishing; each sport in its own way is carried out on tactical principles, differing, it is true, in each instance, and in all instances differing widely from those of war. But there is one sport—that of deer-stalking (and, I suppose, also that of big game shooting generally)—with which the analogy runs more closely. Now would anyone in his senses select a man for the position of stalker on the ground that he was deeply and extensively versed in the literature of the subject? Of course not. But, granted a man of average intelligence and education, the fact that he has so mastered the theory of the sport will enable him to become a true expert in far less time than if his education in the art had been from the commencement empirical. Not only this however, he will, if endowed with a fair imagination, rapidly acquire the instinctive application of his book learning. As an illustration of my meaning let me take a particular case. Supposing I were to show a young officer, fresh from having added a (t) to his name in the Army List, his position on a large scale map, and were to ask him to show me how he would conduct a rear-guard action in certain defined circumstances, his answer would probably be generally sound, however much he might fail in detail. But supposing I were to say, "You are in command of a battalion, and receive the following order from the general in command of your brigade: 'After yesterday's defeat I am retiring on X; delay the enemy's advance for twenty-four hours,'" it is possible, I will even say in many cases likely, that he will not realise that he has to use his battalion as a rear-guard. Probably he would fight a pitched battle. And then, should I point out that he had not obeyed his instructions to act as a rear-guard, he would most likely say: "I was never told I was to be a rear-guard, but, of course, I know all about how to do that." But when he had several times undergone similar experiences, the connection between theory and practice would commence to be established in his mind. He would study the imaginary situation in all its bearings, and would soon learn to bring out of the storehouse of his mind the rules and maxims applicable to the occasion.

But I think we can go a step further in respect to the value of tactical examinations. One of their great advantages is that they force a man to master, and to commit to memory, a large quantity of important, but dry, matter, thus laying a foundation on which a superstructure can be raised by the future study of military histories. The human mind is only too prone to pick the plums out of all literary puddings. Examiners are the nurses who insist that the batter also shall be assimilated. It is a prominent fact in the modern history of English letters that each year brings out brilliant biographies of great leaders, histories of campaigns, monographs on special incidents, essays on the *rôles* of individual arms. But to be able to read these attractive works with due appreciation requires some apprenticeship. That apprenticeship is gained, to some

extent at least, by such a study of military text-books as is forced upon those who pass examinations, just as in the pursuit of any scientific subject all higher teaching is based on the assumption that the student is familiar with the rudiments of the science; just as in the reading of any history of any particular series of incidents in any epoch, a knowledge is assumed of the broad lines of contemporary events as bearing upon those incidents; so in tactics but little profit can be gained from the perusal even of such works as "Napier's Peninsular War," or "The Official Account of the Franco-German War," unless the reader is so familiar with principles that he can fit the facts in order into their places. This fitting of facts into their places implies the existence of a mental framework into which to fit them — a framework which, in my view, should be supplied by the text-book reading necessary for examination purposes.

I have passed aside from my general line of argument a little, in order to press this point, for I am anxious to persuade my brother Volunteer officers that if only they will master the rudiments of tactical science, they have a field of delightful literature before them, from which they can pick, in their leisure hours, flowers as attractive as they are instructive.

The first stage, then, is and must be, the passing of the Regular examination. The second stage in the course of a Volunteer officer should be the war game. I have already pointed out that the war game, or, as I should prefer to call it, the "map fight," forces each combatant to realise in an elementary way the relations between theory and practice. I do not propose to dwell further on that point, for I think that it is on all sides admitted. But in this connection two other points of great importance arise. The first is the clear understanding of the limits of the use (and, I may add, the misuse) of war games. The second is the means by which its advantages can be placed within the reach of all officers of Volunteers.

If any man believes that by practising the war game he is learning, in any complete manner, how to handle troops, he is, as I have already said, grievously in error. But the contempt which is so often poured upon it is, nevertheless, the fruit of misunderstanding, and, perhaps, also of injudicious praise by its advocates. There is no royal road to the knowledge of military art. But for all that no means by which assistance can be gained should be neglected. It is legitimate to take a short cut, when you know exactly the points at which your short cut leaves and rejoins the main road, and also the pitfalls that cross the path. The great thing, then, that the war game teaches is the broad application of the principles on which troops of all arms are moved. The amount of detail into which it may be possible for umpires to enter must depend on the scale of the map, the time available, and the size of forces engaged. Thus, in dealing with a division on the 6-inch map, it is sufficient to indicate the general line and limits of the outposts and their strength. In setting out a company on the 25-inch map the exact position of the groups, together with the detailed instructions for patrolling, can, in the corresponding instance, be given. In both cases, however, there is an

ultimate limit to the detail that can be entered into. It is, therefore, necessary to guard against what will be the natural assumption of almost every beginner, namely, to think that because he can put pieces on a map representing fairly their correct positions in the circumstances of the case, he has mastered the actual machinery by which tactical combinations are carried out.

Great emphasis is frequently laid on the teaching of "map reading," as a sort of by-product of the industry of war game. I do not wish to underrate its value. Anything which gives facility in map reading is of itself of great advantage. But sometimes it occurs that the war game, and especially the minor war game, teaches too much, in so far as it leads to a habit of determining the exact positions of units from the map alone. A corrective to this has been established in the case of the larger war game by the Home District Tactical Society, by arranging that war games which have been played on a map on one day shall be carried out by the same players on the actual ground on the following day. The results of the first experiments in this direction have proved that it was a necessary step in their system of teaching. But it should most certainly be applied in the case of the minor war game, where its necessity must be regarded as being even greater. With all this, however, the kind of map reading taught by war games is only partially the kind of map reading which is useful in the field. No ordinary officer can carry a set of 6-inch maps about his person, still less can he carry maps on a larger scale. In the present state of our Ordnance Surveys, therefore, the inch scale map is the only one practically available for use in the field. But the reading of the inch scale map is a very different art from the reading of the 6-inch or 25-inch map. Although the inch scale map is crowded with information, it will not yield it, except to those initiated into its ways. Indeed, unless one is very careful in the interpretation of its signs, one may be seriously misled in important matters. The practice of war game will not teach this kind of map reading, which necessarily comes at a later stage in the tactical course. I have dwelt upon this matter, because I think that there may be danger in attaching much importance to the remark frequently made, and true within narrow limits, that one of the great uses of the war game is the teaching of how to use maps.

Another essential vice of the exclusive use of map fighting, for teaching purposes, is the impossibility of preventing the combatants from knowing a great deal more of the dispositions of the troops (especially on their own sides) at any given moment than they could possibly know of the same troops in the field. This element of unreality is more important than one is at first apt to imagine. In fact, unless it is fully realised, it may lead to the acquirement of a very faulty system. Suppose, for instance, that the scheme of a fight involves a flank march, and that the senior player has deputed the command of the flank guard to one of his juniors. However fairly the game may be played, and whatever precautions the umpire staff may take, it is inevitable that the senior shall know whether his junior is carrying out his orders in the way he intended. But it is exactly at this point that confusion in real war is most likely to occur.

The General in command cannot know in the field whether his orders are being executed in the spirit in which he conceived them. And, consequently, he can neither correct errors of which he has no knowledge, nor guard against the results of the failure of a subordinate. Whereas on the map, however fair-minded a player may be, his movements and plans must perforce be affected by his knowledge of distant events, which would be hidden from him in reality.

Closely connected with this point is the tendency to acquire the habit of changing plans, and reversing orders. It is so easy to say that four pieces of lead shall be turned about and moved the other way. It is so difficult to make this change with the brigade, of which those four pieces are the symbols. Everyone who has been in the habit of watching closely the conduct of a war game must have been frequently struck with the free-and-easy manner in which, for instance, changes of front by troops in action, reinforcement of one flank by troops from another, and similar movements of great difficulty, are ordered and executed with mathematical precision. Nor is it possible to introduce nearly half the causes which in real business produce confusion and disaster. The blunders of gallopers, and the misunderstanding of verbal orders hurriedly given and received, are causes of failure of frequent occurrence, even in a sham fight. They have no representation on a map. But still more unreal does the war game seem, when one compares the personal condition of a leader in the field with his condition in front of a map. Worn with the fatigues inseparable from the conduct of a campaign, never certain that his information is either full or accurate, having to discount the chances of errors in all directions, his mind occupied with the administration of a vast and complicated machinery, a General in the field has to calmly and rapidly weigh chances and probabilities, and at a moment's notice to arrive at an irrevocable decision. How different is the case of a player sitting on a chair in front of a map! He thinks himself hardly treated when the umpire gives him but five minutes to decide on a course of action. Surely, unless such unrealities as these are guarded against, there is a likelihood of the unfortunate student suffering from the most serious misconceptions as to his own powers of commanding even a small body of troops in a tactical enterprise.

But the unrealities of the war game are not confined to matters personal to the players. All the troops engaged are ideal of their kind. The bits of lead have souls above cowardice; they combine the steadiness of the British veteran with the romantic *élan* of the French conscript. Over the most complicated and enclosed country they pass, it is true, at a reduced speed; but no obstacle throws them into even momentary confusion. In no forest, however thick the undergrowth, do they ever lose their bearings. For precision of drill, even in face of the enemy, they would satisfy the most exclusive advocate of practice in the barrack yard; and silence in the ranks is never broken.

Many pages might be written emphasising these and similar points. I think, however, that I have said enough to awaken attention to my two main contentions in respect to war game:—Firstly, that its utility is

limited broadly to the teaching of the application of tactical principles; secondly, that as soon as it is made to stretch beyond these limits there is serious danger of its teaching becoming absolutely misleading to the student. I am not advocating its abandonment; on the contrary, it is the second step in my proposed system. But it is only a step, and not a very long one.

Still, bearing in mind that our student is as yet unfit, from want of experience, to handle partially-trained troops in the field, the third stage of training must clearly be calculated to bring his knowledge to such a pitch that drill and tactics shall in the fourth and final stage become interwoven. The third stage teaches what dispositions and formations are required in the varying conditions of actual ground. The fourth stage will confer the power, by means of previous courses of drill, of executing those formations rapidly and without confusion. In other words, the third stage is to consist of what are usually termed "outdoor tactical exercises," or "war games in the open." The variety of these is so great, and the amount that, in proper hands, can be taught so extensive, that greater difficulty arises, than in the case of ordinary map fights, in defining where reality ends and unreality commences; in other words, where the experience is useful and constructive, or misleading and deceptive. But I think I should not be going too far in saying that almost everything can be practised except as directly affected by the following:—(1) *Personnel, moral, and actual existence of troops*; (2) the actual executive handling of men, horses, guns, stores, transport, etc.; (3) the actual execution of all kinds of field works; (4) the furnishing of actual supplies; (5) the working of the medical departments. If, as I shall hope to show, I am correct in this analysis, outdoor tactical exercises must in the future assume an even greater importance than is now given to them. Indeed, they will form the most important part (after drill has been mastered) of the course of training of a Volunteer officer. Let us, then, attempt to find any tactical exercise which cannot be advantageously practised by this method, subject always to these limitations. Those of us who had the good fortune of having been regular attendants at these exercises, as carried out under the officers who from time to time have given to the Home District Tactical Society the benefits of their knowledge, will find that there are but few branches of tactics that have not been to some extent practised on these occasions. One would naturally have thought, for instance, that "the battle" was the most impossible of all, as it is perhaps the most important. But subject to these five limitations both the attack and defence of selected positions by considerable forces of the three arms have been worked out without difficulty and in great detail. The positions and movements of every unit have been determined by subordinates in accordance with the general scheme, and the advantages and disadvantages in each case have been gone into by the officer who occupies the position of director of operations. In a similar way experience has proved that the actions between advanced and rear guards, reconnaissances in force, attack and defence of villages, outposts, and so on, are within the compass of the system. It is true

that one cannot loophole walls in peace-time, nor fell trees. But the student can endeavour, subject to correction, to fix the time and labour required for such works, as well as to indicate exactly how he would execute them. It is true that one cannot take possession of a village in the name of Her Majesty. But the student can schedule its accommodation according to the units to be billeted. It is true that one cannot bring up actual supplies. But the student can estimate the capacity of the neighbourhood for supplies and transport. In fact almost the only thing that cannot be done is the conduct of a secret patrol, for the simple reason that the line of observation that has to be eluded, and the information that has to be gained, exist only in the mind of the enemy.

The Volunteer officer who has passed through these three stages of training—namely (1) book reading, leading up to examination; (2) tactical exercises on maps; (3) tactical exercises on actual ground with imaginary forces—will, in my view, be now fit to handle troops in the field, provided he has concurrently mastered the science of drill. This latter provision is obvious; and I only mention it to guard against being thought to be arguing in favour of a purely theoretical course of training. But although a man may have mastered two branches of a subject, each thoroughly by itself, it requires further time to be able to gain the power of uniting instinctively his divided knowledge. He may, on the one hand, be steeped in the knowledge of practical tactics; he may, on the other hand, be a master of the art of handling bodies of men. But the chances are, that when first he tries to use the latter to carry out the former, he will be discouraged by finding that he falls below his accustomed standard in both. This with most men will be inevitable. But the discouragement will be only temporary, as, if he is really grounded in both these branches of military art, the power of automatically employing them in combination will be gained in due course.

Let me, however, add at this point that in this last stage I am entirely at one with those who would prevent us from running before we can walk. For now it is no longer the mere principles that are being taught, but the practice. And nothing is to be gained, while thoroughness will certainly be lost, by exercising any officer in commands more than one step above his actual rank.

I have now sketched the outlines of a course of tactical training as nearly suited as I can imagine any course to be to the existing constitution of the Volunteer force. But, before proceeding further, let me say that, although for the sake of clearness I have divided the course sharply into definite stages, in practice this sharp distinction is neither possible nor even desirable. I do not want to say to a subaltern you must not play the minor war game until you have passed the tactical examination; nor to a captain you must not command a piquet until you have placed imaginary lines of observation and resistance on actual ground. Partial failure to do either of these things, provided the faults are pointed out in a spirit of encouragement, will give a reality and meaning to the previous stage of training. But I do think it important that the general course of study should broadly follow the lines I have indicated.

Now at this point, even if most of my audience agree with me in theory, I feel sure that they are asking themselves how such a system is to be carried out in fact, and I think that two questions will arise in their minds: firstly, how are the learners to afford the time to be taught? secondly, whence are we to obtain the staff of teachers?

I have not the slightest inclination to minimise the difficulties which a very large number of Volunteer officers find in giving the necessary time to military studies and exercises. The calls of business, and family ties, leave in many cases but few hours of leisure in the week. Moreover, I know that anything approaching to any further compulsory sacrifices would tend to increase the dearth of officers. But, that there are any men who cannot find the time necessary to pass the present standard of examination, I do not believe. Difficulties will, of course, arise in the case of scattered battalions, from the fact that the study of text-books must, in most cases, be supplemented by direct teaching; and, unfortunately, the art of teaching, for examination purposes, is not a common gift. I would suggest, however, a partial remedy for this difficulty. Some, at any rate, of the district tactical societies have already organised classes for this purpose. These classes have proved to be of great value, indeed, have been conspicuously successful, in cases where the officers live within reach of the district centres. But why should not their action be extended to coaching by correspondence? Such a method of teaching is already employed by other educational bodies in some subjects, and that of tactics is one in which personal demonstration is less important than it is in cases where this method is already adopted. I throw this out as a suggestion to tactical societies, for I think it may be a means of widely extending their field of usefulness. It is not easy for metropolitan Volunteer officers to realise the sense of isolation in which the company officers of some country corps have to carry out their duties. What is needed is that they should be approached with a simple and economical scheme of instruction by correspondence. I am sure that there are hundreds of comparatively junior officers who would then gladly spend some of their winter evenings in such studies, if they felt confidence that they could thereby pass the examination successfully.

The second stage, that of the war game on the map, presents less difficulty in the matter of time, but far greater difficulty in the matter of teachers. If an officer attends half-a-dozen war games during the winter months, and really pays attention while he attends, it is in proportion about as much as this stage of training requires. For it is worth noting that the spectators of these map fights gain nearly, if not quite, as much instruction as the players. But it is clear that if the only opportunities afforded to officers were those under the district tactical societies' staffs, and if officers attended in anything approaching their full numbers, the crowd of spectators would render the conduct of the exercise quite impossible. And it is equally clear that, in the case of outlying companies of corps in country districts, officers could seldom, if ever, attend. These considerations point to the necessity of decentralisation, at least in the case of the minor war game. And this leads up immediately to a point

on which I have always felt strongly—namely, that the true functions of tactical societies are, firstly, to train Volunteer officers to be able to impart tactical instruction in their turn, and, secondly, to maintain a progressively high standard, both in the methods of teaching and in the substance of things taught.

Already in the metropolis, and in the large provincial towns, the work of tactical societies has borne fruit to an extent not generally fully realised. I should imagine that it was now the exception, rather than the rule, to find corps in London in which some winter evenings were not spent in minor tactical exercises on maps, usually under the direct supervision of one of the senior officers of the corps, perhaps assisted by an officer from some other corps, whose fount of experience has in any case been the Home District Tactical Society. What is required is that this should be pressed further, and that country societies should aim at the same result. Whether this can best be done by the staff of the society moving from one headquarters to another, or by officers attending in some central town, or by modifications and combinations of these methods, must be left in each case for local convenience to determine. The aim should be that in every battalion a staff of officers should be trained to be efficient instructors, umpires, and assistant umpires, who will in turn pass on their knowledge; and that these shall be kept up to the mark by a certain number of attendances at the local societies' own games, where the methods adopted, and the instruction given, are assumed to be of the best professional character. I know one very much scattered battalion in which this devolution is at work, and I see no reason why it should not extend throughout Great Britain.

All that has been said of the training of teachers for the minor war game applies fully in the case of the third stage of the tactical course, the stage of outdoor exercises with imaginary troops. If they can be trained in the one case, by an exactly analogous process they can be trained in the other. Indeed, I do not believe in anyone being a fit umpire and instructor in a fight on a map who is not also capable of directing similar practices in the open. Failing this, he will be certain to permit, or even to encourage, movements and formations which could have no counterpart in the field. The difficulty rather arises in finding suitable opportunities of imparting instruction. And to meet this difficulty I can contribute two practical suggestions. The first is the employment of Sunday afternoon walks (and, I might add, cycle rides) for tactical study. One often hears it remarked that the ordinary 'constitutional" is dull without an object. Here is an object, and a very interesting one, ready to hand. I think that the Commander-in-Chief somewhere makes a remark to the effect that whether walking, riding, driving, or travelling by train he has acquired a habit of considering the country through which he is passing from a tactical point of view. Indeed, most men will consider country as they pass through it from the point of view most in accordance with the bent of their minds. The artist studies the picturesque, the farmer observes the quality of the land, those who love hunting will see themselves in imagination riding across

country, the engineer will triumph over natural obstacles in his mind, and even the speculative builder will construct a phantasm of jerry-built houses, which are to bring him in 50 per cent. Why, then, should not students of tactics convert their constitutional walks, not merely into reconnaissances of ground, but into seriously worked-out tactical exercises? If, for instance, the captain of an outlying company in Blankshire would learn from attendance at his district tactical society's outdoor war games how these things can best be done, what interest he might add to the pursuit of Volunteering, not only in respect to himself, but in respect to his subalterns, and, finally, his non-commissioned officers and men!

The second practical suggestion I have to make consists in the setting of tactical problems to be worked out on actual bits of country, the problems to be worked out when the student has leisure, and the solutions noted in writing, accompanied, if necessary, by rough sketches. One great advantage of this system (which has been at work for three or four years in the London Scottish) is that the element of hurry is eliminated. The officers can visit the ground as often as they wish—the locality being chosen as conveniently as possible for this purpose—and they can by the study of text-books learn slowly and quietly to apply theory to practice. Of course, it is an essential feature of this proposal that sound and adequate criticisms of the solutions sent in should be furnished.

There remains, then, only the last and final stage of training, final at least as far as peace manœuvres can be final, the conduct of tactical exercises with actual troops. Such manœuvres on a large scale, under the command and supervision of Regular officers of high rank and wide experience, take place at brigade camps, at Aldershot and elsewhere. And I am but echoing the feeling of all Volunteer officers in expressing gratitude to those Regular officers for the great labour expended in arranging and carrying out these manœuvres, and for the valuable remarks which succeed them. But there is a point at which the utility of these manœuvres stops, or rather the point at which they commence is too far advanced—and necessarily so. It but seldom happens on these occasions that a junior officer is left, as he perforce might be left in war, to make his own dispositions on his own responsibility. The causes of this are obvious. On the one hand, commanding officers succumb to the irresistible temptation (I speak humbly) of taking their juniors' work out of their hands. On the other hand, the scale of operations is too large for it to be possible for the umpires either to observe fully, or to criticise completely, the smaller units. I, therefore, advocate most strongly the encouragement, in addition, of course, to the larger manœuvres, of small affairs, a company against a company. I have a profound belief that, granted a reasonable amount of knowledge, by far the most successful way of instilling into a young officer, not only further knowledge, but resource and the habit of accepting responsibility, is to thrust that responsibility upon him. This can only be done by letting him rise to success, or sink to failure, by carrying out a small

scheme against a real enemy in sole command from first to last. I do not suppose that any officer, whatever his service, will ever forget the thrill of wholesome excitement he experienced, when first detailed to carry out a detached duty without any possibility of being interfered with by a superior. It is within the reach of every commanding officer to give practical encouragement to such enthusiasm. And by doing so he will often be giving the first strong impulse in the direction of the serious study of the military art. But such small exercises are useless, or even worse than useless, without the proper provision of an umpire staff. In London there are many Regular officers willing to undertake, and of course capable of undertaking, these duties, and we owe them our best thanks. But both in London and in the country the Volunteer field officers, adjutants, and senior captains ought to be in a position to act as umpires, and to draw up instructive reports on the operations. Tactical societies should aim at obtaining this result.

In conclusion, I have but this to add. It was unavoidable in writing such a lecture as this that I should seem to regard myself as possessing both experience and knowledge of an advanced kind. Such in reality is far from my view. It is, in fact, in seeking how best I could gain such experience and knowledge that the ideas which I have embodied occurred to me. I could not possibly, in the time at my disposal, go into great detail. Nor shall I be found any way rigidly attached to the views I have expressed if a better course can be found. Indeed, my chief aim in bringing up this subject was the hope of raising a discussion, the outcome of which might be a real step forward towards attaining the object we all have at heart—the increased efficiency of the Volunteer force.

The CHAIRMAN: It is now my pleasing duty to invite a discussion upon the various points that have been so ably brought before us by the lecturer—a discussion to which he has referred in the concluding paragraph of his lecture.

Lieut.-Colonel LORD WANTAGE, V.C., K.C.B., Retired (late Scots Guards): My Lord Wolseley, I cheerfully respond to the invitation which you have issued. I rather gather that it is the wish of yourself and the other officers of the Regular Army who are here present that this discussion should emanate rather more from Volunteers than from those of the Regular Service who, no doubt, would be able to speak with more authority upon the questions of tactics. A great deal that Colonel Balfour has stated in his lecture commends itself exceedingly to me. I should have been rather glad if he had devoted a little more of the lecture to what he calls the last stage, viz., the practical manœuvres which take place under Regular officers at Aldershot; but I hope, as he has dealt more with the scientific matter which takes up the major part of his lecture, that on another occasion he may give us his experience of practical manœuvres under the guidance and tuition of the officers at Aldershot, and especially under the late commander, Sir Evelyn Wood, under whom I also, with Colonel Balfour, had the honour to serve. I would allude to a feeling which to a slight extent has struck me, that Volunteers may be startled on hearing this lecture and deterred from joining the Force, owing to the very serious studies which they will have to embark on in order to become acquainted with tactics. Now, there is one paragraph which I must say does seem to me to partake rather of a startling announcement. It is this, that the complete form of tactics comprises a knowledge of "map-reading, ballistics, elementary woodcraft,

a little astronomy, some engineering, a quantity of military statistics, field fortification, besides, of course, those dispositions of troops of the three arms, regarded as orthodox by consensus of experience in various typical circumstances." Colonel Balfour passes on very truly, and compares tactics to sport, with which I think he very properly and appropriately compares it. If I were allowed to give a rough definition of tactics, I should say that tactics are all those devices which a commander resorts to in order to harass his enemy, and, if possible, to kill him ; and also those devices which, in the performance of his duty, he adopts in order to prevent his enemy harassing and killing him. That gives a general description of what I should call "tactics," and under that heading comes a very elementary part which is most necessary for Volunteers to study, viz., outpost duty, advanced guards, rear guards, etc., and those elementary portions of drill which are, for ninety-nine Volunteers out of a hundred, the most important to acquire. The fact is, while we are talking of very splendid acquirements under the heading of tactics, we must not forget the minor matters which are so very essential and necessary to learn, and I quite agree with Colonel Balfour when he says that these minor points must be studied, and studied over and over again until they become the mere A B C ; and officers should get them by heart, so that if they are called upon to perform them they may do it by routine, and not have to exercise any thought or reflection. I have had the honour of being at the head of a brigade at Aldershot for some years. Naturally a General Commanding does not give much time to regiments going on outpost. On one occasion I was out with my brigade, and I was told by Sir Evelyn Wood to station outposts along an extended line in which some woods occurred. I had about three-quarters of an hour or less to do it in. I gave the word, and I was delighted to see the celerity with which the companies moved off to occupy a wood in the distance. I thought everything was going well, and was very pleased to think that the Volunteers would be approved of. When Sir Evelyn Wood had been round he came to me and said, "I am sorry to tell you two of your outposts were facing the wrong way." Now, doubtless the officers were so engaged in thinking how the sentries were to be placed, that they forgot the main thing they had to bear in mind, viz., where the enemy was likely to advance from. This is an instance of a brigade which had been practising for some time. But I should like to be allowed one comment on Aldershot field days, and it is this : that the General Commanding the field day should take what steps he thinks necessary to secure that all ranks should have a general knowledge of the plan of the day's operations. Strange as it may appear to some, it is nevertheless the fact that many in the ranks and others besides never know the plan of the battle or the supposed position of the enemy. My first experience of tactics was the year after the Duke of Wellington died, when Viscount Hardinge became Commander-in-Chief. The great Duke had been Commander-in-Chief for many years, and he stood so firmly on the rock that nobody could venture to approach him or suggest any change or improvement ; but when he died, Lord Hardinge became Commander-in-Chief, and there was an outburst of military zeal and interest in matters connected with the profession. The camp of Chobham was formed, and shortly afterwards I remember being quartered at Chichester when we were called upon under the command of our Colonel to place some outposts on the Downs. I went out, and I remember cutting along as quickly as possible from bush to bush and placing a sentry at every ten yards along the sky line. When the Colonel said to me, "Why did you put them so very thick?" I replied very promptly, "Sir, it is night and there is a fog coming on." So I was supposed to have scored, and got out of my difficulty very well. Another subaltern, who was also with me, was asked what he would do in case he was called upon to fortify a farmhouse—how he would proceed? He immediately said he should enter the farmhouse, shut the doors, close the windows, and put up the shutters. "What next?" said the Colonel. "Oh," he said, "I

should await events." We came to the conclusion that these were rather the tactics of the ostrich, and that my friend was never likely to become a very great General; and he never did. I remember an officer was asked what he would do when one "G" sounded, or when there were three "G's" sounded. He replied that "really as he had no ear for music he could not possibly say." I listened to the concluding part, as indeed to the whole lecture, with very great interest. Colonel Balfour is recognised as one of those Colonels who is, I won't say a "progressive" Colonel, because that is a phrase which does not always commend itself to us, but a Colonel who will keep the Volunteers alive. I may call him "a keep-'em-alive Colonel," and that is really what we want. Officers must be constantly turning the attention of their men to professional questions, and what Colonel Balfour says is perfectly true, that by reading and studying text books the Volunteers will be introduced to most interesting literature. They will also have the pleasure of discussing tactics. It is a remarkable thing how much Volunteers now are in the habit of talking shop. With regard to the latter part of the lecture, I am entirely in accordance with the speaker, where he recognises the grateful way in which Volunteers regard the instruction they receive from officers of the Regular Army. It really is hardly necessary to say a word about that now, because it is so thoroughly recognised. There was, however, a time when that was not the case. There was a sort of stand-off feeling on the part of the Volunteers, perhaps also a similar feeling on the part of the Regulars. For a long time the Volunteers were groping about, and did not get the assistance which, for the last twenty years, they have had from their comrades in the army. Colonel Balfour says upon that, "I am but echoing the feeling of all Volunteer officers in expressing gratitude to these Regular officers for the great labour expended in arranging and carrying out these manœuvres, and for the valuable remarks which succeed them." Then he goes on to say—and in this I do not quite agree with him—"but there is a point at which the utility of these manœuvres, or rather the point at which they commence, is too far advanced, and necessarily so." I do not think it is possible that practical training can be too far advanced. Volunteers may not grasp it all, but they can grasp a great deal; but what Volunteers want on these occasions at these camps of instruction is to be told by the General what is in his mind, and what the idea of the operation of the day is. The General should tell it to the Brigadiers, the Brigadiers should tell it to the officers commanding the regiments, and so on to the men; and then, when everybody understands the scheme, it is astonishing how much it facilitates the tactics which are to follow. I have trespassed too long, and our time is very short, but I may thank Colonel Balfour for his lecture, which has been both interesting and instructive.

Lieut.-Colonel C. G. A. MAYHEW, retired pay (Brigade-Major, North Midland Volunteer Brigade): It is not my intention to criticise in any way Colonel Balfour's very admirable and instructive lecture, but rather to point out what we are doing in the country in the direction of some of the suggestions that he has made. I may mention that some years ago a tactical society was organised in the brigade to which I am attached, and the duty of secretary devolved upon myself. The brigade is composed of six battalions, which, with one exception, are scattered over a very wide area in three adjoining counties. After a series of lectures at convenient centres, an experimental class was formed in military topography entirely by correspondence. The officers only met once for practical instruction in field sketching. Those officers went up for the prescribed examination and they all passed. I may mention a fact in connection with that examination which was rather a curious one. One officer executed a sketch of such remarkable accuracy that the Military Education Department thought it proper to question me whether this sketch was not a tracing from the Ordnance map. The officer in question was an officer well known throughout the

Volunteer force, a man of the very highest integrity, occupying a very high position as a civilian in his own county, and therefore there was not the slightest doubt about the authenticity of the sketch. I merely mention that fact, not as any slur on the Department, but to show what a very high standard can be obtained by this system of instruction as proposed by Colonel Balfour. That experimental class was only the commencement of a series of other classes. In the first tactical class formed seven officers passed out of nine. In the next class five officers went up and all passed. In a field fortification class, three went up and two passed. At this present moment we have classes not only in tactics, but in field fortification, military law, and military topography, and they are all being conducted by correspondence. I am glad to say, that lately we have had immense help from General Wilkinson, if I may mention the fact, as I see him here. He was good enough to start what is now known as the North-Eastern District Tactical Society, somewhat on the lines of the Home District Tactical Society. It was necessary, on account of the immense area, to divide the district into divisions or sub-districts. Assistant instructors were appointed in various parts of this district. I think Colonel Balfour alluded to the financial part of the question, so that I had better mention the fact that a small subscription of a guinea was collected from each battalion, and these made the fund from which the expenses of umpires in various parts of the district were defrayed. One very important rule was passed the other day, and that was that a grant of 5s. should be allowed to every officer who passed the regular examinations, towards paying for the expenses of postage and books. Colonel Balfour, in his lecture, has alluded to the practical instruction of officers in tactics. There was a new departure last year, if I may so express it, through the kindness of the officers in command of two of the regimental districts; when outpost schemes were arranged in the vicinity of the depôt barracks, they allowed a detachment of Regular infantry to be formed on the left of the line. The Volunteer officers and non-commissioned officers were taken on to the ground where this piquet of Regulars was posted. They went into all the details; they saw how the reliefs were told off, the patrols marched, and so on, and afterwards they continued the line and posted their own piquets and sentries. I have asked several officers who took part in the exercises questions about it, and they agree it was the best thing they ever did. With regard to out-door exercises generally, there is one little suggestion I would like to make, which was attempted last year, and I think it might be carried out with advantage in other places, that is, that the conductor of the operations should after the exercise write out all the orders which he thinks should have been given by each commander, and also a short *précis* of the reasons for those orders; and this should be distributed with a plan to everyone who took part in it. The practice of writing orders is one that I think should be practised. It is a very difficult matter for anyone to write orders suddenly in the field, particularly when they are not accustomed to it, at least I found it so myself, and I daresay others have found it difficult as well. When we had one of our out-door exercises this month at Hemsley, near York, we had the advantage of Colonel Smith as conductor of the operations. He made a suggestion, and though it was an after-dinner suggestion, I do not think it is any the worse for that—it was in my humble opinion a very useful one; it was this, that as these tactical societies are developing, and they are able to turn out officers of the very highest ability in tactical work, that one society should send a challenge to another society; that, say, the East Scotland or West Scotland Society should cross the Border and meet the Home District Society somewhere midway, and in mimic mortal combat should come to blows, and that an umpire should decide the result of the bloodless engagement. I think it is a suggestion that might be worth attending to. I should like, as one who comes from the Midlands, to thank Colonel Balfour very much for his excellent lecture. I think the interchange of ideas on these subjects is most important, and we can gain a great deal from meeting here to hear what is being done in London.

Major-General Sir FRANCIS GRENFELL (Inspector-General of Auxiliary Forces): I could not, charged as I am to a certain extent with the administration of the Force, sit still and not express my admiration at the able lecture which has been delivered. As regards the subject of the lecture, there can be no question as to the advantage or disadvantage of tactical training. I well remember when tactical training was first commenced in my regiment, and I recall the feeling of horror and dismay when one day before marching out we were told that the subaltern officers were to send in route maps. I had for a long time in my possession a map which one of those subaltern officers sent in. It consisted of a long yellow line like a serpent, and at short intervals were placed various public houses, their names being all carefully inscribed. There was a very curious hieroglyph up in the corner of this map, and underneath was written, "This is Mirshes." That was the first start in my regiment a great many years ago, and I cannot think of what is now going on in the army without contrasting those days with the present time. Lord Wolseley mentioned that ten minutes was enough for a sermon, and I am afraid my remarks may partake somewhat of the nature of a sermon, as I feel that I am obliged to give you a certain amount of remonstrance coupled with facts. When I heard that this lecture was about to be given, I asked an officer in the Military Education Department if he would be kind enough to come and see me at the War Office, as I was anxious to get some information as to what advantage the Volunteer officers had taken of the various tactical examinations which they were allowed to go up for. We were strongly pressed some years ago to give various rewards to officers for tactical examination, and I am sure it has been a great advantage to those who have passed; and we are now being pressed to continue those rewards for further examination in "C" and "D," but I must say I was rather surprised when I got the number of the T's extracted out of the Army List, to see the small number of officers who had taken advantage of this examination. In the Volunteer force, the establishment of officers is about 7,800, and we have now serving about 6,200 officers. I find this year that out of the whole of that Force, only twenty-seven officers and captains have been up for examination and twenty have passed; of the subalterns of whom there are 2,800, only seventy-one have gone up for the examination and forty-three have passed. I am speaking of the infantry. The artillery are somewhat better, they have passed a few more. In the "C" and "D" subjects, with regard to which we were pressed to give some distinguishing mark at the end of the name in the Army List, fifteen captains and field officers have been up this year, and fourteen subalterns; and going back, we find about the same ratio. Perhaps it is a little better this year than it has been for the last few years, but in the whole two-and-a-half years in which the officers have gone up for these various subjects, of captains 105 have passed, of subalterns only 213 have passed, and in "C" and "D" twenty-four have passed. We find the field officers and captains are the men who take most advantage of this tactical examination, and there are many officers who command regiments, who take every subject up themselves, in order to set a good example to their captains and subalterns; but we do think that, when these examinations are arranged and every encouragement given, more officers of the Volunteers should take advantage of them. An officer told me the other day in the North, that a Board assembled for the examination of Volunteer officers in tactical subjects. A certain number of officers had put their names down. The Board was sent to the garrison town and sat for the examination. After the first day, the Director of Military Education got a telegram from the Board to say, "We have sat all day; have had a most excellent luncheon; but no officers have appeared." On the next day the telegram stated that after waiting a second day they had gone home. I trust that after this lecture and taking into consideration the advantages which Colonel Balfour has pointed out to us of tactical training, that this may not recur. I venture to go off the track of tactical training for one moment, and to speak about the entire

training of officers of the Volunteer force, and I do so because some time ago I received a most interesting letter from Australia. General Hutton, a very pushing and able officer, has been for the last three years organising the forces in West Australia, and he writes to me as follows:—"Since my arrival here, I have initiated a system of annual field training for our partly-paid troops, whose organisation is practically identical with that of the Volunteers at home. The experiment has proved eminently successful, beyond my most sanguine hopes. Officers and men have entered into the spirit of the training, and it has had a most beneficial effect. It necessitates the company and regimental officers acquiring a good grasp of their duties: practically, for the drill and field work of their men; and, theoretically, for the lectures which they have to give in accordance with the syllabus. Non-commissioned officers and men are individualised by the system of training as given, the good being commended, the bad cautioned or discharged, and the deadhead is eliminated—that is, the man whose efficiency is equivocal is found out. At no time have, I believe, the regiments in this colony been so strong as they are at the present moment, nor has their instruction been so thorough, nor so many useless men got rid of." The syllabus provides for only four days' training in the year, the last day in minor tactics; and I am sure Lord Wolseley will tell you that no exercise in the army has improved our officers so much as our system of field training, which for some years now has been in practice. I do feel that we should not neglect drill and tactics. What we do want in the Volunteers is, more sympathy between the officers and men, and more association between the officers and their companies, and that instruction given by the younger officers of the squad—by the captains to their companies—which is so beneficial to all ranks. I am sure that if time could be spared (perhaps you may say it is impossible) fresh advantages would ensue, and, therefore, as I have got these papers, I wish to use this public occasion to say that if any tactical society, or individual officer of Volunteers, would like to look over the syllabus, and the manner in which it is carried out, I should be most happy to lend it. Lord Wantage has spoken of the commanding officer whom he calls the "Colonel keep-'em-alive." There is another commanding officer that, I fear, we want, and that is the "Colonel catch-'em-alive." We are 1,500 officers short in the Volunteers, and in the country we are told that the Volunteers do not care to spend too much time with their regiments, and if greater demands are made upon them they will get alarmed and will not join, or leave their regiments. I do not believe it; but I do believe that if more tactical exercises were promoted, and, if it were possible, company field training introduced, we should attract quite as many officers—and more than we do now—who would take a greater interest in their work; and eventually from this tactical and other training, enormous advantages to the officers and men of the Force would be derived.

Colonel H. BETHUNE PATTON (Commanding Severn Brigade): I have listened to the very able lecture which Colonel Balfour has been so good as to read to us here to-night, and I have also listened to the various remarks which have been made by the other officers who have followed him, notably by the Assistant-Adjutant-General of the Auxiliary forces. I may say I know it is a fact from my long connection with the Volunteer force—an experience extending over fourteen years, acquired by the command of a large battalion of 1,200 men, and six years in command of a brigade—I know as a positive fact that notwithstanding the shortcomings of officers who may not have passed in tactics and other military subjects, the Force is sound at the core, and that there is the most earnest wish on the part of officers to make themselves efficient and to become efficient leaders of the men they have the honour to command. But the difficulties that Volunteers meet with are these:—Many of us are detached in country places where we have not the advantages which they have in large towns. This great city we are now in has a General at its head who leads the Volunteers in the most energetic

manner. They all follow him to a man. They have advantages of coming in contact with the Regular troops, the Guards; they have advantages of tactical war games and various other aids, which should place them far and away above the other Volunteers in the country. But what we are here, I imagine, to consider to-night is not what is applicable only to a few officers, but what is applicable to the whole Force. I perfectly agree with Colonel Balfour in thinking that tactical societies are springing up all over the country. I know in the Western District, to which I belong, there has been one at Bristol for some time past, and within the last fortnight one has been started at Cardiff and another at Exeter. This shows, as far as we are capable of acquiring knowledge, we are doing our best. But the difficulty at the present time with regard to the Volunteer officer is this: there is abundance of opportunity for obtaining theoretical knowledge. There is the school of instruction at Wellington Barracks and at Aldershot, where an officer can go for thirty days, that is to say if he can. But considering that our officers are professional men and have to live by their brains and industry, it is very difficult for them to get away for a continuous thirty days, and also to stand the expense, in order to take a certificate at the school of instruction. The officer loses professionally, he also loses pecuniarily, and then at the end of the time he has not gained very much tactical instruction. He has acquired an amount of drill which is most useful, and which I consider to be the foundation of all tactics, but he has not acquired from being drilled in a barrack square and with only some very few men that knowledge which I think is the point which we are met to consider to-night. Then they have the war game, and last of all the outdoor tactical exercises, and very useful and instructive they are. But, my lord, I would say this, what I think is the greatest necessity for the Volunteer force in the present day is that the senior officers of the Volunteer force should *all* be able to handle their men in the field, and at manœuvres in such a way as to be able to get on without their adjutants. This is what I want to see, an officer take his battalion in hand, receiving orders from the officer in command of the brigade, who will say, "Colonel, Major, or Captain So-and-so, do so-and-so; assume battle formation, take up a certain position"; and then I want to see him give his instructions to his subordinates, and see him do it himself. We have a large force of 230,000 men, but this country wants a guarantee that the officers, at any rate the senior officers, of that Force, shall be capable leaders of the magnificent men that they have the honour of commanding. I will only say this, that the Volunteers are what their officers make them; furthermore I will say that the officers are *what their country makes them.* If the country refuses to spend any money at all upon our instruction, we may rack our brains with theoretical knowledge, we may read all the books ever written, we may learn how able Generals have commanded large armies, but still at the same time if you tell some senior officers to perform a simple manœuvre in the field, they show that more practical knowledge is needed and should be given them. I have racked my brains to try and find out how this object can possibly be obtained without cost to the State in money, and I must confess I have given it up. I have not been able to arrive at that happy state in which an officer could obtain what Sir Francis Grenfell said just now is the keystone of the whole of an officer's duty—the valuable information that he derives from field training. You cannot go in for field training without the men: you must have the men, or you cannot gain experience from field training. I have with me a small outline of a scheme which I admit at once would cost money, but if it commended itself to you, my lord, as one which would be likely to increase the tactical knowledge of the officers of 230,000 men, upon whom this country would in a great measure have to depend, I am not at all afraid that if you approve of it and the officers of the British Army approve of it, but that any Government would probably take it into consideration. The scheme I would suggest would be this:—In the first place I

would say you must have the men, and the question is, What men are you to have? I would have a *special service battalion* formed in any district, made up of companies each of non-commissioned officers and men of the Army Reserve, non-commissioned officers and men of the Militia, and non-commissioned officers and men of the Volunteer infantry who may offer their services for thirty days, being paid the same as the Line. *Staff.*—A special service commandant, that is to say, the most up-to-date officer that can be found, a man who knows thoroughly how to instruct and how to maintain discipline with a mixed force, such as that might be. An adjutant also equally efficient as himself who would be specially appointed, also sergeant-instructors would be selected and appointed as well. *Officers.*—Officers would be selected from the Volunteer force. They would receive no pay, but, in order to make two ends meet to a certain extent, I would grant a field allowance of 5s. per diem to officers of all ranks. *Period of Instruction.*—A roster should be kept of all officers desirous of joining the battalion for a ten days' course of instruction. Extra time granted if vacancies exist. *Standing Camp.*—The battalion to be placed under canvas at a time and place suitable for a standing camp of all arms of the Regular and Auxiliary forces. Manœuvres under the general officer commanding the district. *Field firing* should be carried out if possible with full strength, because I think it might give the Army Reserve men an opportunity of having a very valuable course of field firing whilst they are out for this duty. *Hasty Intrenchments.*—Instruction should be given if suitable ground can be procured in making hasty intrenchments, etc., an officer R.E. being attached for this purpose. *Naval co-operation*, if possible, because I think if in a large camp bordering on the sea-side, as many of our camps are, a sudden dash on a camp were made by the Navy, it would wake up the outposts and infuse fresh life into the Force. It would also impart a reality in attack and defence such as might take place in this country.

Colonel C. H. COLES (1st London Volunteer Artillery): I take it that the object of this discussion is to endeavour to ascertain how officers can best be trained to enable them to make successful dispositions of the *personnel* and matérial under their command in the presence of the enemy, and it must always be borne in mind that, whereas many officers have the leisure, and avail themselves of it, to study, and to undergo examinations, very many have not the time to do so, and these are the men that it is necessary to train in order to fit them for the specific duties they have undertaken to carry out. Speaking as a garrison gunner, I think a very great deal can be done in the instruction room with a blackboard and some chalk. Certain officers can be told off—as in the war game—to perform the various duties in the chain of command in coast defence. Qualified officers can act as umpires. A short scheme set and worked out by each officer, with the aid of certain arbitrary *data* put up on the blackboard. I am strongly in favour of "object lessons," and these supplemented by lecturettes and discussions, teach officers who have not the time to devote to hard reading a great deal of the theory of their duties. Passing on to the practical training, I must strongly urge the necessity of providing guns and mountings of the same description, as the men are called upon to man in the forts they are allotted to as much valuable time is consumed in teaching the drill of these guns which ought to have been learnt at their ordinary drill stations. The garrison gunner is fortunate in many cases in being able to carry out practice with some amount of reality. He fires at a moving target and uses the guns and range-firing instruments, and mans the fort under some of the conditions of service. One of the most difficult tasks is correct "observation of fire." This can be taught practically by making all officers not actually employed, note down their observations of each round, stating the estimated number of yards over or under, and comparing their reports with that of the range party afterwards. Nothing but practice will ever make a man a good observer over water. The relation of ground to tactics is

important, and the relation of the water area to coast-defence tactics is none the less so. Artillery officers must, therefore, study the water way in the vicinity of their forts, for a knowledge of this is of the greatest consequence in the tactical working of guns. Officers and men should be constantly manning the forts they will occupy in war-time, and opportunities given them to make themselves acquainted with the chain of command applicable to the locality in which they might find themselves, and to qualify themselves for the exercise of higher functions should the necessity arise, for I venture to say this is as important in the garrison artillery as in an infantry organisation. Opportunities should also be given to officers to study electric communications and position-finding instruments, when their fortress sections are unprovided with these, in order that they might have some knowledge of them if suddenly called upon to man a section where they are in use. I can conceive no greater advantage than the manning of a work in conjunction with the Regular troops, assigning to each the section they would man in war-time, and carrying out the operation under Service conditions as nearly as possible. Constant study, and as thorough a knowledge of his own duty as possible, must be the aim of every officer; otherwise, when the time comes, officers who do not act up to the responsibility of their position, will be set aside, and relegated to other duties where the requirements are nominal. The lecture is principally of an infantry nature, and far be it from me to detract from the great importance of that arm; but as commanding a regiment of artillery in the metropolis, I feel I cannot let slip the opportunity of the Commander-in-Chief being in the chair, to ask for the extension of his kindly and powerful sympathy to the arm to which I have the honour to belong. No one knows better than the Commander-in-Chief that the Regular artillery are not sufficiently numerous to man, in war-time, even a respectable percentage of the guns which are mounted for the defence of England; and that in the early and dangerous days of mobilisation the only possible reserve are the V.A., until the Militia arrive, which will take some days, and during this time the V.A. will stand in the front line of defence with the R.A. Is it not time that the tactical training of the garrison artillery should be taken in hand?

Major-General Lord METHUEN (Commanding Home District): I am in the unpleasant position of having had my best expressions made use of by either Lord Wantage or by Colonel Patton. As General of this district I think I cannot make it too clearly understood that there is a certain class of men like Colonel Balfour who would be a first class man at Oxford, and in whatever profession he moved would try at once, not ignoring details, to get to the top of the profession to which he belongs. There are a few others like Colonel Balfour in this district who study theory thoroughly, but wherever you are not in a large town the number must be very small indeed. It is not for the first class man at Oxford that we have to legislate, it is not for the man of Colonel Balfour's information that we have to devise rules for education; we have to think of the man who would simply pass his "little go" at Oxford; it is he who occupies the position of the large majority in the Volunteer force whom we have to teach. Colonel Balfour says we are accused of having instructed officers to run before they can walk. Why, gentlemen, there are many officers in the Volunteer force who cannot even walk. These are the men we want to get at. There are men who are not able from want of money to go to the schools of instruction or into camps; they ask for assistance of the authorities, and I, as the mouthpiece of those officers, say that if the authorities wish to have that education in the Volunteer force, which I contend is absolutely necessary, then let me see the Volunteer officer, whether he be at the school of nstruction or whether he be in camp, at any rate placed, as far as money is concerned, on a level with the officer who belongs to the Militia force. Gentlemen, it is easy enough in a district like this or in Manchester or Birmingham to carry

out the programme so ably developed in the lecture of Colonel Balfour; but I contend, and I speak with the evidence of those who command some of the regimental districts in England, there are country districts where that is absolutely impossible. Money and time cannot be afforded by many a Volunteer officer in a country district to carry out the programme that is offered here by Colonel Balfour. But there are officers who, if they see the authorities giving them encouragement, giving them money to go to camps of instruction, transporting the mounted officer's horse free of expense when proceeding to a camp of instruction, then these officers will be able to gain instruction better than at present. We shall then, at any rate, be progressing one great step further towards our object, and we shall be offering to the officers of Volunteers the same facility for obtaining military instruction which is now given to officers in the Regular forces.

Mr. SPENCER WILKINSON: I hardly propose to follow the very interesting paper Colonel Balfour read to us, because I gather that on most of the questions as to the method by which Volunteer officers should be trained he is in substantial agreement with the views which, some of you will remember, I myself have more than once advocated. I rose to venture a suggestion in reply to something that fell from Sir Francis Grenfell. Sir Francis complained that the Volunteer officers did not in sufficient numbers present themselves for examination in tactics and the other subjects in which the examinations are now open to them. I am not sure whether it was possible from his statement to get quite a clear account of how the matter stands, because he merely quoted the numbers of those who in a given year had offered themselves for examination, and did not give us the total numbers out of the whole 6,000 who had already, or at some previous time, passed the examination, and I think if he had been able to give those figures——

Sir FRANCIS GRENFELL: Those are the figures for two-and-a-half years.

Colonel LONSDALE HALE: I took 100 battalions of infantry by chance last night from the list, and assumed that, as among the 2,000 officers there were 1,500 of them who had not a "t" of any kind against their name, three-fourths had not gone up for examination.

Mr. SPENCER WILKINSON: That is what my impression was, that about twenty five per cent. of the officers had offered themselves for examination. The suggestion I was going to make is this, not to examine quite so much. I daresay the suggestion coming from me will startle those who remember the part I took many years ago in urging that these examinations should be instituted, but some experience of the working of them and of the working of the tactical societies, and of the relation between that work and the practical work which the officer has to do, convinces me that an examination is a very poor substitute for the best way in which an officer will learn his work, that is, by direct instruction in his battalion, and that it would be a great advantage if there were a little more teaching and a little less examining; and that brings me to rather a delicate point, which I can only venture to touch because I am no longer myself an officer, but I will put it to those who have practical experience of the Volunteer force, whether what the Force wants is not a little less examining and a great deal more inspection, in the sense of the superior officer himself ascertaining how far the individual among his subordinates is qualified for the position which he holds. I believe upon that line you can get a great deal more in the way of practical result out of the officer than by any quantity of examining. It is quite true that if you have an examination on a given text-book, a certain number will read the text-book; but on the other hand, if you have in the district where those officers are a Brigadier or General, who says: "I expect the officers whom I shall inspect

each to be able to do certain things, to be able to handle their troops in a certain number of situations," if that practical test is one of the conditions which the officers must satisfy they will find out, text-book or no text-book, how to be able to do it, and their brother-officers will find out how to teach them. I do not believe, however, that you will get the full force out of that method unless it is accompanied by another principle, and one which, as you, my lord, occupy that chair to-day, I may perhaps mention, that is, that in any military system efficiency has to begin at the top; that therefore if you want the officers of a Volunteer battalion to learn their work as officers, the man who is responsible for their doing so is the commanding officer, and if you have not a competent good commanding officer, no amount of examinations and no other system will produce competence in the subordinate officers. Everyone who takes the Volunteer force seriously knows that this is the truth. We are too apt, in discussing these matters, to wander round the point. What the serious officers of the Volunteer force want to see is a system, which no doubt Sir Francis Grenfell might devise, by which those commanding officers, who are not the instructors and not the leaders of officers below them, should be landed in some position of distinction and responsibility. I believe the dearth of officers which is complained of can be remedied only by making the thing real, and if the junior man sees that certain gentlemen, who no doubt many years ago were very patriotic and very useful, but who have ceased to be the leaders, the teachers, the instructors, and the trainers of their battalions, are relegated to some other sphere of happiness there would, I am perfectly certain, be a sense among the junior men that the thing was real. There would be an inducement to work, and if it could be found possible to do a little less examining and talk, a little less about book-work, and to introduce a system by which the General should expect the officer to do tactical work practically, a system under which the officer would know that if he could not do this he would have to go, but that if he could there might be such a thing as promotion—a system, in short, of selection according to fitness—then, according to my conviction, the Volunteer force might be made what I am unable to see that it yet is, but what I hope that it will be—a real contribution to the defence of this country.

Colonel LONSDALE HALE, R.E. (Retired): I hope it will be clearly understood that the sole reason for my taking part in this discussion is a request made to me by the lecturer that I should do so, notwithstanding that he thinks there are certain differences in the opinions which he and I hold on the subject of this lecture; but, gentlemen, when his lordship entered this Institution just now, I was greeted by him with the words: "I hope you will speak. I always like to hear you speak when I am in the chair." Now, considering the difference in our positions, those words sound like a very great compliment, but I hardly took it in that sense; because I remember what took place the last time that I spoke before Lord Wolseley, and our opinions differed, and I know what my feelings were after Lord Wolesley had replied to me, and as I left the building I had a very warm sympathy with those unfortunate animals who are sometimes prepared for our delectation, namely, eels that have been skinned alive; but your lordship performed that operation in such a pleasant and genial way, that if you think it necessary to repeat it to-night I have not the slightest objection to being skinned alive at the end of my remarks. In what Colonel Balfour put forward there is nothing open to any objection, and a great deal to approve of; but he does not go far enough. He would make any system of instruction voluntary, and, therefore, so far as improving the Volunteer force, we should not be one step further, because the success must depend entirely upon individual goodwill, effort, opportunity, and energy. He does not like to suggest, in any way, that the examination should be made compulsory. Therefore I cannot support the scheme, for I do maintain that, whatever system of instruction or examination is adopted, it should be made compulsory upon the officers of the Volunteer force. When we talk of Volunteers, or when we meet

for discussions on Volunteer subjects, it would seem as if there was only one party to the question, viz., the Volunteer officers, the defenders of the country; but I beg to say there is another party, and that party is the inhabitants of the country to be defended by the Volunteers. Please to forget me as a somewhat notorious teacher. I am speaking to-night simply as an inhabitant of this country, living at Coombe Bank, Camberley, Surrey. The fact that I live at that spot makes me take a personal and practical interest in the question, because I believe that it is possible, owing to the chance absence of our fleet, that an invader's force may land on our shores, and then march direct on the country. It so happens that the house where I live is situated between two of the main lines of approach from Portsmouth and Southampton, and not half-a-mile from either. I am not speaking, then, in any spirit of levity at all; I take a personal interest in these Volunteers, and I always do regard the Volunteers as people who may have to defend me and mine. Well then, gentlemen, I am not going to support any system which leaves your efficiency as Volunteers to depend upon yourselves; I insist as an inhabitant, that any system for making you efficient to defend me shall be compulsory, and I will show you the need for it from Colonel Balfour's own paper. Colonel Balfour has given you certain details as to what the Force that is to defend us consists of, and I think that when I have brought that out, you will all be in favour of the application of compulsion to any system of training whatever. First, he has made use of a very apt simile indeed, in connection with the men and the officers, who have of their own free will undertaken the defence of this country. He has talked of bricks and bricklayers, and what does he tell us? He says the men of the Force are half-burnt bricks, liable to be put out of shape with the least touch. I corroborate what he says, because in the Long Valley and elsewhere I very often come across these "half-burnt bricks." And those who have to handle these "half-burnt bricks." What does he say about them? The bricks are very friable, and we should like to see that very good officers are sent to deal with them. But no. He does not even say the men who are to build them up into the wall of defence between us inhabitants and the invader are even "journeymen" bricklayers. They are certainly not "master" bricklayers, according to Colonel Balfour, but he certainly says they are "bricklayers' apprentices"; and we, the inhabitants, have at this very moment for our protection walls of "half-burnt bricks" put together by "bricklayers' apprentices." I know many officers of the Force pretty well, and allow me, therefore, to say that in that Force there are not only "journeymen" bricklayers, but "master" bricklayers as well; and I may tell my brother-officers of the Regular forces, whom I see in front of me, that there are Volunteer officers of high and low degree who know as much of their profession, and sometimes a great deal more than many of my brethren in the Regulars. Now I pass to the next thing in the lecture, which is a little bit startling. This question of examinations. First, I may say that when my friend Mr. Spencer Wilkinson talked rather about the hardship of examinations, he had not done as I have—examined Volunteer officers for promotion; and if you only knew the very simple examinations they have to pass, and the lenient view the examiner has to take of it, I do not think you would have very much sympathy with those who are rejected. With regard to this examination, why is it necessary? Colonel Balfour wants it in order to induce study of the text-books, and he tells you what is the value of that study in its bearing on the knowledge of tactics. But the grounds on which he urges this study are rather appalling to the inhabitants of this country. He says:—"I have passed aside from my general line of argument a little in order to press this point, for I am anxious to persuade my brother Volunteer officers that if only they will master"—what?—"*the rudiments of tactical science.*" This implies, surely, that if they have not studied the text-books, they have not even mastered the "rudiments of tactical science." What a pleasant revelation to the unfortunate inhabitants of this country! The study of the text-book causes men to master these rudiments; the value of the examina-

tion is to give us a guarantee that these rudiments have been studied; and here are these alarming figures which I worked out last night: that out of some 2,000 Volunteer officers taken at random from the Army List, we the inhabitants of this country have absolutely no guarantee that 1,500 of them know even the "rudiments of tactical science." Gentlemen, that is rather a serious matter when you come to look at the question from the point of view that the Volunteers may be at any moment required to carry out the defence of this country; this fact that as to 1,500 out of 2,000 officers you have no guarantee that they know the "rudiments of tactical science." Now I pass on to the last point which I intend to refer to in the lecture, and I think it may be a revelation to you, but it is no revelation to me. He says:—"I have not the slightest inclination to minimise the difficulties which a very large number of Volunteer officers find in giving the necessary time to military studies and exercises." Time necessary for what? Simply for rendering those men efficient leaders of the men who are to defend my house and hundreds of thousands of houses in this country. He admits they have not got the necessary time, and what does Colonel Balfour say after that? He says: "And I know that anything approaching to any further compulsory sacrifices would tend to increase the dearth of officers." Well, why not? Do you think I want Coombe Bank defended by a man who has not had the time necessary to master the rudiments of tactical science, who cannot even in peace-time be trusted to touch these "half-burnt bricks," cannot do so even in peace-time without fear of putting them out of shape? I say, let them go—I do not want them, they are a danger to me! Bring it home to yourselves as inhabitants of this country that as my friend Colonel Balfour says, the Volunteers are what the country makes them. I want the country to make them what they ought to be, not to leave them the dangerous and unreliable Force they are. Just suppose that under some system you had a very great depletion of officers. I hardly know how much it would be, but say a very large depletion of officers—what is to follow? You cannot set men to build walls and give them an overwhelming number of bricks; they can only have the number of bricks they can manage at one time. The depletion of officers must be followed by carting away a number of the half-burnt bricks, and you must reduce your men till they are manageable units in the hands of the efficient officers you have available. That is not an original opinion of mine, as many of you know, and who will refer to my lectures last year. I take my stand by Marshal Niel, who, when he organised the Garde Mobile of France, was reproached for doing it slowly; but he said: "No, I will not allow any Corps to be formed until I have obtained officers to command them." What I propose is simply the application of that sound principle. Let me tell you what you will have left after this depletion of officers and men, and I leave you to compare what you could have with what you have got now. You have now between 300 and 400 units of Volunteers. Say you are reduced to 75 units, and your Force from 230,000 to 50,000, think what that 50,000 would be; 50,000 of the pick of the Volunteer force; 50,000 Englishmen; those who are in the ranks far superior in their intelligence to ordinary men in the line, led and commanded by men who owe their position not merely to social influence, but social influence combined with knowledge of the profession. Why, gentlemen, you would have 50,000 men that no country has ever produced, and no country in the world could produce. You would have 50,000 men who could be relied upon for the defence of the heart of the Empire, and who would, therefore, be one of the most stalwart bulwarks of the world-wide Empire of Great Britain. You would have 50,000 men in whose ranks it would be a pride to stand, or in which it would be a pride to hold a commission; you would have 50,000 men whom, if it happened that some illustrious visitor came to review in the Long Valley and took a bird's-eye view of from the Fox Hills or Cæsar's Camp, he would not simply look at them and pass pleasant flatteries upon them; no, he would scan them closely as one of the most potent factors which any Power with evil eye intent upon this country would have to take seriously into account.

Gentlemen, if this were carried out you would have a force in which any Englishman, whether peer or commoner, poor or rich, would be proud to have his name enrolled. And now let me meet one objection which will be made. We shall be told: "Yes, but if you apply your compulsory system to the Volunteers, your proposal will be extremely unpopular." No Member of Parliament, careful of his seat in the House of Commons, would dare to venture to support such a revolutionary measure; and remember, that all these 230,000 voters have a vote at the polls." It will be said that no Government, however strong, would dare to carry such a measure into effect. Gentlemen, in the name of the Volunteers of this country, I scout those imputations with scorn and indignation. Gentlemen, what was the spirit that brought the Volunteer force into existence? It was the spirit of patriotism. Gentlemen, what is the spirit that has led you, the officers and men, to make sacrifices of time, money, and labour, and to keep that Force going? It is the spirit of patriotism. Will you not, gentlemen, now, if it be found necessary that a great and sweeping revolution should be made in the Force, in order to convert you from what you are now, a Force as a whole unreliable, because untrained—if it should become necessary to carry out a reform which may convert you into a trustworthy and trusted nation's guard of England, will you not allow the same spirit of true patriotism to prevail, and, though with regret, accept the same uncomplainingly? My Lord, the eel is ready to be skinned.

Lord WOLSELEY: There are still before me the cards of several officers who have been good enough to express their willingness to give us the benefit of their opinions upon the subject under discussion. But it is already getting late, and as I have an engagement which I must keep, I should be unable to remain to hear them speak. With your permission I shall, therefore, call now upon Colonel Balfour, the lecturer, to give us his views upon the various points that have been touched upon by those who have spoken. We must then conclude our proceedings for this evening. I regret extremely that I am obliged to do this, but I do not see my way to any other course.

Colonel E. J. A. BALFOUR: I will detain you very shortly indeed. Lord Wantage was the first speaker who made any criticism upon my lecture, and both in his case, and in that of the other speakers, I ought to say at once I thank them for the extreme courtesy of their remarks, and for the very kind words they have spoken in appreciation of what I was able to write. Lord Wantage complained a little, I think, that I perhaps "piled it on" somewhat too strongly in defining "tactics." I think, perhaps, if you refer to what I actually said, it was to the effect that in their *complete* form, tactics involve a knowledge of the subjects referred to. I am afraid I showed want of clearness, but I never desired to produce the effect of suggesting that junior officers should be expected to know any large quantity of all the various subjects I did refer to. Of course, these ought to be mastered by senior officers. If I may be permitted to point out, Lord Wantage himself made a very amusing commentary upon his own criticisms when he described how a fellow-subaltern, in his early days of soldiering, had been called upon to put a house in a state of defence. That was, of course, exactly one of the very points I was anxious should be understood by the ordinary officer in a very simple way. I do think it is important that subaltern officers should be able to throw up an earthwork at a proper angle and in proper form. I was very much interested to hear the remarks of Colonel Mayhew and Colonel Patton as applying specially to country tactical societies, because they both bore out one of the chief points of my lecture, the method of what I should call teaching by correspondence. I do think that is some approach to the solution of the difficulty we all feel of reaching country officers by a practical method which would not cost much money and would not force them to travel long and expensive journeys. Major-General Lord Methuen was specially kind in his

remarks about myself, but I feel I cannot have made myself quite clear, or I must have produced a false impression in his mind. I had hoped the scheme I sketched was one which would be of real assistance in reaching officers of average intelligence and in distant localities. Of course, I entirely agree with him that money is wanted. I tried to avoid the question of finance in my lecture. Money is wanted not only in the way Lord Methuen mentioned; and I feel very strongly it would be most desirable if the Government would sometime see its way to grant money to teaching tactical societies, provided they were under the direct supervision of general officers commanding districts, or regimental districts. I think that is a method by which real assistance, at but slight cost, might be directly given to the best class of Volunteers. Mr. Spencer Wilkinson, whom we are always glad to listen to, because there are very few men who have done more by their literary ability in assisting the Volunteer force, dwelt very strongly upon the point of the direct instruction of the battalion or corps, and upon official inspection as ensuring that. I think that was his main point. Of course, I did try and point out in my lecture that I regarded tactical societies as indirectly leading to that result. That is to say, if the senior officers of regiments, corps, or battalions, would attend at tactical societies, they would then in their turn be able to pass on their knowledge to their juniors. I strongly believe that the proper instruction for the Volunteer unit is the senior Volunteer officer. But he has no means of getting such knowledge except through a properly-conducted tactical society. That seems to be the natural chain of instruction—tactical societies, commanding officers, and then junior officers, and so all the way down. Of course, we all regret extremely that Sir Francis Grenfell should have found it necessary to state the facts he has in relation to Volunteer officers having passed tactical examinations in such few numbers, but we must face these facts as they are. I can only say I myself will do my very best, as far as my little influence goes, to try and insist that the examinations not only in tactical subjects, but in other subjects, shall be passed by everybody who might be induced to do so. Colonel Lonsdale Hale has come forward with one of his brilliant speeches, but I think he has misunderstood me. The whole of my lecture depended upon what I call the Volunteer system as at present constituted. I was not here to lecture upon a reform of the Volunteer system, but upon a scheme of teaching tactics to Volunteer officers under the existing system. I have written in the past two or three articles, which are obtainable by anybody, in which I advocated a far more revolutionary reformation in the Volunteer system than Colonel Lonsdale Hale himself has suggested. But it seems to me, speaking as a practical man, that we should face problems in a practical way. Whatever I may think desirable in the way of reform of the Volunteer system is one question. But taking that system as it is, it is surely the most practical thing to do to try and show you that the system as it is can be improved. The two problems are separate. Colonel Lonsdale Hale pointed out that there was a question of popularity in voting, and so on. That is true, and I do not think at the present moment there is the slightest chance of any such scheme, as I and others have sketched, of a general reform of the Volunteer system being carried out in the present state of public opinion. That being so, should we not put our shoulders to the wheel, and do the very best we can with what we have got? That seems to me a perfectly sound argument. I think perhaps my words were twisted by Colonel Lonsdale Hale, so as to mean more than they were intended to convey. I talked, it is true, about the "half burnt bricks," and of course the Volunteer force as compared with the Regulars is in that sense composed of half-burnt bricks. But let us recollect when we see Volunteers out at Easter, and at other times, that they have in their ranks recruits of but a few weeks' standing, and who have done seven or eight *hours'* drill at the most. Compare such men with the men in the Regular force, who are not put in the ranks till they have had seventeen months' training in the case of the Royal Marines, or four months' in the case of the Guards; of course they are

comparatively half-burnt bricks. It is, therefore, a little hard, I think, to press my meaning quite to the extent that Colonel Hale has done. In fact, if we can do what we do with a few hours' work, the implication is that we should very rapidly be able to do more with a comparatively small amount of additional regular work. Colonel Hale also talked of Volunteer officers having *impossibility* in finding the necessary time to study tactics. I think my word was that they found *difficulty*. I have not the slightest inclination to minimise the difficulty which a very large number of officers find. I was trying throughout the lecture to point out how these difficulties should be overcome. That they can be overcome, I believe. Then, of course, to launch out into the question of reduction of numbers is a very serious matter, involving many outside problems, such as those of recruiting, finance, and so on, which I do not suppose anybody who has not had to face the financial difficulties a commanding officer of Volunteers has to face, has ever even thought of. I cannot go into these matters now—they are beyond the scope of this discussion; but I think these are such important elements in the case that it would be wholly unfair to consider even the purely tactical question without going into them. One more point only. I believe that the body of Volunteers as a whole has throughout its career been continuously improving. So long as improvement is continuous such a Force is worth maintaining. If that Force lost its *esprit de corps*, and once began to go down hill, then I think it would be legitimate for the Military Authorities to consider whether its days ought not to be numbered. But so long as it is progressing, however slowly, so long it seems to me those engaged in helping it on have a right to demand that their efforts shall be recognised, and from time to time assisted, even by money. That is all I have to say, except to thank you, my lord, for presiding at this lecture, and to thank the audience and speakers for the very kind way in which they have received my lecture, and especially those speakers who, when they criticised me, did so in the most pleasant possible spirit, and in the most encouraging way.

Lord WOLSELEY: Before I proceed to say anything whatever on the various topics which have been so well and clearly brought before us, not only by the lecturer, but by some of the subsequent speakers, allow me to say what a pleasure it is to me to find myself once more surrounded by the members of this Institution. I have been, as you know, entirely absent from England for five years. Although I had a tactical society in Ireland, where we did a certain amount of good, it was on a very small scale, and we could not at all expect it to equal in usefulness this great and long-established Institution. It is many years since I had the pleasure of being here, and I hope it may not by any means be the last occasion that I shall have the honour of presiding at your meetings. After a considerable absence I come back to find that you have quitted the ruined tenement I left you in, and have taken up your abode in this very fine building. That is a matter upon which I think we cannot congratulate ourselves too much. And may I add that, although there have been some hard things said this evening about the authorities which govern—I do not say whether justly said or not—the Government has met the members of our Institution very fairly by allowing us to establish ourselves permanently in the splendid hall which adjoins this theatre.

Well, gentlemen, I feel great diffidence in speaking this evening, or in criticising the topics that have been raised, because I am here in two capacities. In the first place, I remember that as Commander-in-Chief of the Army I must be very guarded in my remarks, lest I should at all imply that the Authorities at the War Office—those who keep the purse strings in England—are backward in their endeavours to make the Volunteer force what we all hope it may eventually become, what it is, I think, on the high road to become, a thoroughly efficient military body, fully capable of fulfilling the wants and requirements of the nation,

and even of defending that beautiful lodge in Surrey where my gallant friend, Colonel Lonsdale Hale, resides. (Laughter.) I think in the discussion that has taken place, and also in the remarks of the lecturer, there has been a slight confusion of meaning in the terms made use of. It is a very common error, and I am sure what I say will be appreciated by all those who have had to instruct younger officers—I refer to the mingling up of two distinct terms, or perhaps I ought to say, the failure to draw a precise line between the "art of tactics" and the "science of strategy." We hear men sometimes talk of the "science of tactics." Now, that is, I think, a misapplication of words, for "strategy" is a science, and "tactics" is an art. It is very desirable that you should keep this distinction in your minds in all military discussions. As regards strategy, we all know how desirable, how essential it is that those who hold high positions of command, all general officers, all staff officers, and those who have to instruct others in military matters generally, should have a very extensive knowledge of strategy and of military history, from which, I may say, the rules of strategy are derived. As regards tactics, it is an art; and, as far as I am able to speak with any authority, is an easily-acquired art. I think it was Sir Charles Napier—I am not quite certain—who said that he was prepared to teach a great deal of tactics to a regiment in any part of Great Britain, because he could with a small body of even ten men marching along a road teach the preliminary and fundamental principles of this military art. I fully agree with him. I believe any captain of a regiment can do this. I go further, and maintain that a very large amount of what we call tactical instruction can be imparted in a room. Given a blackboard and a good instructor, I believe it would be possible to convey to the mind of the ordinary British private, and therefore still more easily to the mind of a private in the Volunteers, a considerable amount of tactical knowledge. He could thus be taught much as to what he should do, and the steps he should take, if he suddenly found himself in presence of an enemy. Outpost, rear guard, and advance guard duties can to a large extent be taught in a room. I quite agree with my friend Mr. Spencer Wilkinson that a great deal can be taught in this way without going out of doors at all. I do not for a moment wish to depreciate the superior value of instruction that is given in the field and during practical manœuvres. On the contrary, I think the more all officers of the Regular troops and of the Volunteers go into camp and are there taught tactics and tactical operations on the ground, the better it will be for them and for the Army. Mr. Spencer Wilkinson said that the officers of a regiment are generally what the commanding officer makes them. That I believe to be absolutely and entirely the case. I will even go further, and say that the men of a company are what the captain makes them. But if captains mean to do their duty thoroughly and properly, they will carefully study themselves the subjects which it is their duty to teach their men. They are the best men to teach those under their command. If a company is badly instructed it is the captain's fault, and you may then expect to find men at manœuvres in the position described by one speaker—facing the wrong way when on outpost duty. When I remember what Volunteers were, and when I see and know what they are at the present moment, I cannot help congratulating them upon all that they have done in recent years. We all know what they were at first. They had very little discipline and a very small knowledge of drill. Now they have improved in both those points. When I refer to drill, may I plead a little in its favour? It is a point which has been rather kept in the background this evening. All experienced soldiers know well that skill in tactical formations, and in tactical operations, depends very much upon the manner in which the troops concerned have learnt their drill. No man, I suppose, has worked harder than I have to reform the old-fashioned drill, and to make it what it is at the present moment. I have worked to get rid of all sorts of obsolete formations, of old-fashioned processes, and complicated and intricate barrack-square manœuvres, which looked very pretty, no doubt; I have always done that, and will always continue to do so. But I have never for a

moment deprecated or depreciated the value to a soldier of a sound knowledge of his drill. That this knowledge is essential to the soldier cannot be pressed too strongly upon all ranks of the Volunteer force. Drill is a point to which all Volunteers, especially those in the country parts of England, might with great advantage turn their attention a little more than they have done. The lecturer has referred to those people who wish to run before they can walk, and I know from experience that all soldiers should learn to walk well before they attempt to run, and that in order to be efficient as fighting men in the field they should first learn to drill well. Drill is not only a process of moving men in certain formations and in large bodies, but it is also a mode of imparting discipline. It not only trains the body, but it disciplines the mind at the same time. It teaches men the first rudiments of obedience; and if I were asked what is the greatest of all military virtues, a virtue even higher than courage, I should reply, it was absolute, unquestioning obedience. I do not think you can teach obedience to a body of men better than by a process which we commonly understand by the word drill. I have often watched from my barrack-room window a non-commissioned officer drilling a squad of recruits in the barrack square. The language used was perhaps occasionally not purely classical or of the choicest description, but it was very effective. It made the men understand what was wanted of them. The first object in the mind of the drill-sergeant is that the men he is drilling shall be absolutely obedient to his every word of command. The hour's drill upon the barrack square was consequently a lesson, an instruction imparted to the minds of the men being drilled that was of far greater value than any amount of proficiency in the goose-step, or in the art of "right and left turn" he was then engaged in teaching them. I cannot, therefore, help thinking that although a sound knowledge of tactics is of great consequence to all officers, proficiency in drill is essential for every man, no matter what his rank may be, who aspires to be a thoroughly good soldier. In our anxiety to learn tactics, we must not neglect to make ourselves, in the first place, perfect in drill. We have had some very valuable recommendations made to us as to the mode in which tactical knowledge can be most easily and effectively imparted to the officers of the Volunteer Service. The lecturer told us that tactical knowledge must not be compulsory, whilst my very eloquent and learned friend on my right (Colonel Lonsdale Hale) told us it is absolutely necessary that it should be made compulsory, and that unless it was so the object aimed at would never be secured. We have been told that 1,500 out of 2,000 officers had not qualified themselves in minor tactics. That fact showed there was a great deal to be said in favour of making it compulsory; but, as Colonel Balfour said, we have to deal with actual facts, and we cannot lay down any rule as to what would be the best possible process for imparting the tactical knowledge we are anxious that Volunteer officers should learn. We must take the Volunteer force as we find it—and a magnificent Force it is—and above all things we must do nothing that will injure that instinct, that patriotic feeling, referred to by Colonel Lonsdale Hale, which called it into existence. We must remember what that Force is composed of. We must remember that a very large proportion of the officers in it cannot devote themselves day by day, or even for some hours during specified weeks in the winter, to learn what we would like to teach them. We have to take them as they are. As practical men, if we cannot have a whole loaf we must be contented to take half. If a man has a gap in his fence and cannot afford to have an iron gate, he must be prepared to put up with a wooden one. That is the way in which we must look at the Volunteer force. We must try and facilitate, in every possible way we can, the acquisition of tactical knowledge by officers of the Force; but I am afraid we have not yet arrived at that period when we can lay down a hard and fast rule and say dictatorially to the officers, "Unless you learn so-and-so, and pass certain examinations, we must dispense with your services." On the other hand, I do believe that whenever we get a bad commanding officer we should do in the Volunteers what I hope we shall always do in

the Line, namely, get rid of him. If the men and officers of a battalion of the Line or the companies are not properly instructed, and if they show a great want of tactical knowledge, and great want of discipline, or if they do not march well, the first thing to do is to change the commanding officer; and I hope the same course which is adopted in the Line will be adopted also in the Volunteers. If we find a Volunteer battalion in a bad state, careful inquiry into the circumstances should be made, and if we suspect that the fault lies at the door of the commanding officer, we must say to him very civilly, "Sir, you have done your best, but your best is not good enough for us, and you must go." Gentlemen, it is getting late, and I regret to say that I must leave to fulfil an engagement which I made some time ago. I should have liked to say many more things, but I hope to have other opportunities of doing so. I should, however, like you to carry away this feeling with you, that there is no man in England who has a greater admiration for the Volunteer force than I have. That is no lip-saying on my part. I have always fought the battle for the Volunteers, and I hope to be always able to do so. You may rest assured of this, that when anything affects the efficiency of the Volunteer force, if I can do anything in my capacity to rectify it, or to help on tactical instruction in that great Service, you will always find me anxious to do so. It is a Force we cannot make too much of. It is a Force upon which we must always depend to a great extent for the defence of this country. Indeed, I fully recognise that if the Volunteer force, instead of growing in size and increasing in efficiency as it is now doing, were to decline either in numbers or efficiency, it would be a serious matter for the rulers of this country. They would soon have to consider the propriety, the necessity, of largely augmenting the Regular Army. We know what that augmentation would throw, not upon the country only, but upon everyone of us as taxpayers. I am glad to find there is no likelihood of any such misfortune overtaking us, because year by year this great Volunteer force goes on prospering and also improving in efficiency. I believe that your tactical societies which have been started in many places recently, and are now working so admirably, have largely helped towards this improved military efficiency and the spread in knowledge upon tactical subjects. Gentlemen, I am very glad to find myself once more amongst you, and I thank you for the attention with which you have listened to me this evening.

FOREIGN SECTION.

THE SEAMEN OF THE GUARD.

1803—1815.

By Lieutenant de Vaisseau ÉMILE BERTRAND.

Translated by permission from the "Revue Maritime et Coloniale," by Captain H. GARBETT, R.N. (Retired).

> "They have been none the less good seamen, because they have shown themselves the best of soldiers. When required, we have found them seamen, soldiers, artillerymen, engineers, everything!"—NAPOLEON I.

THE history of the Seamen of the Guard has never yet been written, and yet it must have offered many temptations for the historian, for this phalanx of heroes, less in number than the Old Guard, covered itself with glory in all the campaigns of the Empire, and their brilliant deeds deserve to be handed down to posterity.

Napoleon, who has been accused by many writers of despising the navy, held, on the contrary, sailors in high esteem, and especially this Corps of Seamen of the Guard, of which he was the founder. We find in the "Mémorial de Sainte-Hélène," by Las-Cases, the following opinion of the Emperor on this *corps d'élite*, with the reason for its creation:—

"In Russia the fleet is only a part of the army, and thus she has the inestimable advantage of possessing a force which is equally available for service either afloat or ashore.

"I had myself some such scheme in my head when forming my *équipages de haut bord*,[1] but what obstacles did I not have to encounter, what prejudices had I not to overcome, what an amount of persuasion had I not to use, before I could obtain even a uniform for these poor sailors, enroll them, and get them drilled! 'I was spoiling everything,' they said. And yet, what should we have done without them? What happier idea could there be than to have a body of men whose services were available in the double capacity of sailors or soldiers with no increase of cost! As sailors they have in no way deteriorated, and they have shown themselves the best of soldiers. When occasion required they proved equally valuable, whether as sailors, soldiers, artillerymen, or engineers; there was no duty they could not undertake.

[1] Napoleon re-organised the *personnel* of the navy, forming regiments of soldiers, who were styled "équipages de ligne, de haut bord et de flotille." The first two were practically identical, the crews being large enough to man a line-of-battle-ship or two or three smaller vessels. A "vaisseau de haut bord" was a first-rate or three-decker.

"If, as regards the navy, instead of having had countless obstacles to overcome, I had found some one to fall in with my views and anticipate my ideas, what a grand result might not have been achieved! But never during my reign did I find anyone in the navy who could tear himself from the general routine, or who knew how to organise. I was particularly fond of all sailors, I esteemed their courage and their patriotism; but I was never able to find even one officer who knew how to make full use of their capabilities, and give them opportunities of doing themselves justice."

So in order that he could always have by his side these men, whose qualities he appreciated so highly, and whom he knew to be capable of being employed in any and all enterprises, the First Consul Bonaparte introduced a Corps of Seamen into the Consular Guard. Having become seamen of the Imperial Guard on the foundation of the Empire, they served with La Grande Armée through all its campaigns. Their name is inseparably associated with the construction of the bridges to the island of Lobau, at the passage of the Danube which preceded the victory at Wagram, and with the victualling of our army during the Polish campaign. Taken, not to fight, but to facilitate the transport of the soldiers by water, they were in many instances obliged to act as combatants, and as such behaved as a veritable *corps d'élite*.

At the disaster of Baylen, the Battalion of Seamen of the Guard, turned for the time being into an infantry regiment, showed the most admirable discipline on the battle-field, and made several attempts to force the enemy's lines. Finally, during the campaign in France, they proved themselves worthy rivals of the Territorial Army, and their heroic actions conferred equal lustre on their own colours and the national flag.

Disbanded after the first abdication, re-enrolled on Napoleon's return from the Island of Elba, the career of the Seamen of the Guard ended at Waterloo. The remains of this valiant company were withdrawn behind the Loire and the corps broken up. It has never since been re-established; but when in a recent unhappy war, the call of honour summoned our sailors to the aid of the army in defending their native country, they behaved valiantly and proved themselves worthy sons of the heroes of La Grande Armée.

I.—The Camp at Boulogne.

(First Enrolment of the Corps of the Seamen of the Guard, 1803-1804.)

By refusing to evacuate Malta, England, thus violating the treaty of Amiens, forced us on to war. There was one circumstance which provoked the public indignation and aroused a general desire to humiliate this perfidious enemy. It was suddenly learned that English ships had attacked our merchant vessels. It was then that, with the approbation of the Senate, the Corps Législatif, and the Tribunate, the First Consul determined to carry the war into the very heart of England. A formidable army was soon collected on the coasts of the Channel, and at the same time orders were issued for the construction of a large flotilla, the work being distributed among all the ports. With an enthusiasm worthy of olden times, all the departments, towns, corporations, and even private

individuals came forward, offering, according to their means, to supply vessels for the transportation of the troops to the other side of the Channel. From the month of June, 1803, the First Consul made his headquarters at Boulogne, which was fixed on as the principal base for the concentration of the fleet. Three sorts of vessels were definitely chosen for the transport of the army:—

1. Gun-sloops, carrying four guns of heavy calibre, two forward and two aft, and having accommodation for a hundred infantry with their arms and ammunition. These vessels, brig-rigged, and manned by twenty-four sailors, were easy to handle and at the same time well armed.

2. Gun-boats, carrying one 9-inch gun forward and one field-piece aft, with accommodation for a company of infantry, one artillery caisson, and two horses. They had three masts, no square sails, and were manned by six sailors only.

3. Pinnaces, long lightly-rigged boats, but provided with sixty oars, pulled by the sixty soldiers which each pinnace carried, besides the two or three seamen necessary for her management and steering. These pinnaces had each a howitzer forward and one gun aft.

These three kinds of boats numbered about 1,200, and adding to them 1,000 fishing boats which were to be used in transporting material and horses, there was, in all, a total of some 2,200 to 2,300 vessels to be collected together.

The First Consul had the basin of the Lianne excavated, thus making the harbour of Boulogne, in which 1,300 vessels were able to find a refuge, and he further ordered the construction of the harbours of Etables, Wimereux, and Ambleteuse to shelter the rest of his flotilla, and then returned to Paris.

It was then that he first formed the idea of enrolling a corps of sailors, which was to be specially attached to his person, under the same conditions as the regiment of the Consular Guard. On the 1st September, 1803, he gave orders to Rear-Admiral Décrés, then Minister of Marine, to organise a battalion of about a thousand seamen, divided into seven companies, who were to man certain corresponding sections of pinnaces and sloops. These companies were to be attached to the following ports:—St. Malo, Granville, Havre, Boulogne, Calais, Anvers, and Dunkerque, and orders were given at these ports for the building of the pinnaces and sloops, which were to be manned by the Seamen of the Guard, and the whole was carefully supervised by an engineer of the name of Forfait. Captain Daugier, was given the command of the battalion, which was henceforth to be known as "the Battalion of the Seamen of the Guard." On the 23rd of September the naval authorities and the heads of departments received orders to choose from amongst the seamen of these ports the men who were most fitted to be enrolled in this *corps d'élite*, and to despatch them without delay to Courbevoie, where they were to be billeted. The men received over and above their pay as sailors the same additional pecuniary allowance as a cavalryman of the Consular Guard.

The uniform of the Seamen of the Guard was as follows:—A round jacket of dark blue cloth with a high collar, having an edging of orange-coloured cloth, and trimmed with a gimp of the same colour; sleeves with red facings, edged with orange cloth; epaulettes without fringe, on a dark blue foundation, with an edging of orange; a black leather belt; black shako, edged with a yellow and orange plaited braid and a red plume.

Meanwhile, the flotilla was being collected together with difficulty. On the 12 h March, 1804, Captain Daugier was sent to Cherbourg to hasten the armament and departure of the vessels which were fitting out there. After he had finished his work in this port, he was to visit in turn Granville, St. Malo, Nantes, Rochefort, Bordeaux, and Bayonne, with the same object.

Bonaparte was anxious to utilise his Seamen of the Guard by forming them into a reserve squadron to accompany the vessels transporting the Guard. Each company, of about 140 men, was to man a section of the flotilla, composed of nine sloops and nine pinnaces, at the rate of twelve sailors to each sloop, and four to each pinnace. Three sections of the Guard were assembled at Le Havre, where Captain Daugier arrived and took over the command in May, 1804. He completed the armament and victualling, and, after having exercised them for several days at sea, he profited by a favourable opportunity to proceed to Boulogne, where the other crews soon joined him, that from Calais being the first to arrive. Marshal Soult, who commanded at Calais, had, in his capacity as Colonel-General of the Guard, to review them and hasten their departure for the rendezvous. This small reserve squadron assembled in Wimereux harbour. The First Consul came to Boulogne the better to direct the work and drilling of his army. He had a hut built on the cliffs, whence he could command a view of the harbour, the open sea, and the camp. It was there that he had his headquarters and surrounded himself with the sailors and grenadiers of the Consular Guard, that he might inspire them with confidence. Shortly after this, the Empire was established, the First Consul became Emperor of the French, and the Consular Guard took the name of the Imperial Guard. On the 15th August, 1804, a distribution of the insignia of the Legion of Honour was made in the presence of the whole army and navy in the camp at Boulogne. As the ceremony finished, and the columns filed off preparatory to marching past Napoleon, a squadron of fifty sail was sighted. It was the van of the flotilla, commanded by Captain Daugier, coming into port from Le Havre—a happy coincidence which seemed to assure them that even the ocean in its turn came to pay tribute to the Man of Destiny. The army, full of enthusiasm, impatiently awaited the order to embark and effect the descent on England, when a most unexpected event completely altered the aspect of affairs, and sent our soldiers to conquests in other lands.

II.—Campaign of 1805.

(Ulm—Dirnstein—Austerlitz.)

England had just succeeded in prevailing upon Austria, Russia, and Sweden to enter into a new coalition. At the same time Napoleon

learned of the defeat of Villeneuve's fleet off Cape Finisterre, a fleet on which he had counted to protect his flotilla when crossing the Channel. The project of a descent on England had, therefore, to be postponed, and one by one the different corps of the army were despatched to the frontier of the Rhine, and the Austrians having invaded Bavaria, whose Elector was our ally, Napoleon determined to march immediately on Vienna and bring the war with that nation to an end before the Russians had time to come to its aid.

Having completed all his arrangements for this new campaign, Napoleon turned his attention towards protecting his fleet from any attack on the part of the English. The vessels returned to the ports, and twenty-one battalions of infantry were left to protect them. The sailors of the fleet, 11,000 strong, were organised into battalions, supplied with muskets, and infantry officers appointed to instruct them. The whole of this army of defence was placed under the supreme command of Marshal Brune. Finally, before leaving the camp at Boulogne, Napoleon assembled all the officers who were to remain there, explained to them the importance of the duty entrusted to their honour, and promised them that they should be sent to the front in their turn. Several battalions of the flotilla formed during the following campaigns a part of the army, and were attached to the engineers.

Napoleon left Boulogne on September 2nd, stayed a short time in Paris, and arrived at Strasbourg, to which place his guard had preceded him, on the 26th. One hundred and twenty men of the Battalion of the Seamen of the Guard started on September 15th, and joined him at Strasbourg. Captain Daugier, who had been commander since the beginning of the campaign, had offered to resign his commission, but this the Emperor would not allow, so he started and took over the command of his battalion. I shall not attempt to describe the splendid march made by the French troops through the Suabian Mountains; the march which, after the battles of Wertingen, Gunzbourg, Haslach, and Elchingen, terminated in the investment of Ulm. In the earlier stages of this campaign the Seamen of the Guard did not play a conspicuous part. They were, however, always with the Guard, and on the 20th October, 1805, surrounded Napoleon on the plains of Michelsberg, when the 50,000 Austrians under General Mack, who surrendered there, defiled before him.

Having crushed the Austrians, Napoleon continued his forward march to encounter the Russian Army which was approaching under General Kutusoff. Our army followed the right bank of the Danube, but Napoleon detached the divisions of Dupont and Gazan to the left bank, under the command of Marshal Mortier, who, after crossing the Danube by the bridges of Passau and Linz, followed the stream on the left bank, always keeping parallel with the main body of the army. To connect the two banks, Napoleon ordered the collection of a large number of boats from the Inn, the Enz, the Traün, and the Danube, and the formation of a flotilla, which, manned by the Seamen of the Guard, was put under the command of Commander Lostanges, and was to

serve the double purpose of communication and transport. Unluckily they took some time to collect the flotilla, and the nature of the ground did not allow Mortier to keep pace with the troops on the right bank. The route on the left bank of the river is indeed so narrow—hewn as it is out of the rock—that, not to delay his forward march, Mortier had sent the only battery at his disposal by Commander Lostanges' boats.

Meanwhile, the commander of the Russian Army, which was in full retreat before us, learning of the existence of this corps, isolated on the left bank, resolved to annihilate it, and on the 11th of November he attacked Gazan's division in its sortie from Dirnstein, separating it from Dupont's division, which remained one march behind. His guns were instantly disembarked and a fierce contest ensued, which ended in a hand-to-hand engagement. Before forces so superior, Gazan's division was obliged to give way until the arrival of Dupont's division changed the tide of fortune. The Russians were driven back, and Marshal Mortier was able to resume his forward march. Napoleon hastened to get these two divisions across the Danube, and to replace them on the left bank by the force under Marshal Bernadotte. Some days afterwards we entered Vienna.

In the meantime, the Russian and Austrian Emperors, at a meeting at Olmütz, decided to make one supreme effort. It was on the plains of Austerlitz, on the 2nd of December, 1805, that there took place the decisive battle which put an end to the war.

The Austro-Russian Army was annihilated, the Imperial Guard was not even needed. The presence there of the infantry and seamen with their arms at the "Order" may have assisted to bring about the rout of the enemy, but it was only the artillery and cavalry of the Guard who took part in the actual contest.

The treaty of Presbourg fittingly ended their glorious campaign, and destroyed the third coalition, Napoleon and his Guard returning to France.

III.—The Campaigns in Prussia and Poland.

(Jéna—Crossing of the Ukra—Battle of Czarnowo—Eylau—Friedland—Danzig—1806-1807.)

After the victory of Austerlitz and the treaty of Presbourg, Napoleon hoped, for a brief moment, that peace would be assured throughout Europe; but his hopes were short-lived. Prussia, who during the whole of the preceding campaign, had hesitated to join our enemies, suddenly declared war against us, and at a most inopportune time for herself, since she had to fight alone, and our armies still occupying Austrian territory had but a step to take to be in Berlin. The Imperial Guard left Paris and proceeded with the utmost despatch to the Rhine. On the 20th September, 1806, a company of Seamen of the Guard, 100 strong, left in relays for Mayence where the Guard was mustering. The army entered on the campaign immediately, and henceforward met with an unbroken succession of victories—Saalbourg, Schleitz, Géra, Saalfed, and finally Jéna, which opened up for us the route to Berlin. At Jéna, as at Austerlitz, in spite of

their desire to fight, the Guard was not engaged. A story is told that Napoleon, passing along the front of the infantry of the Guard, heard several voices cry, "*En Avant!*" "What is that?" he asked, reining in his horse. "It can be only a young man of little experience who dares to prejudge my actions. Let him wait till he has commanded in thirty pitched battles before he gives me advice." The voices were silenced. Those who had spoken proved, indeed, to be some young *vélites*[1] of the Guard who were burning for opportunities to display their valour. On the 28th October, 1806, Napoleon in the midst of his Guard, entered the Prussian capital as its conqueror; he remained there till the 25th November, leaving his lieutenants to complete the conquest of Prussia.

Meanwhile, the Russian Army, coming to the aid of the Prussians, crossed the Niemen and the Vistula, and took possession of Warsaw. It abandoned this place on the arrival of the French troops, and intrenched itself behind the Ukra and Narew. The corps under Marshal Davoust was the first to enter Warsaw, and crossed the Vistula by the bridges of boats which had been made there by the Seamen of the Guard, who had recently been attached to this force. The Vistula, which was full of drifting ice, made this work extremely difficult, but the Seamen displayed the greatest courage and resolution. On the 23rd of December, Napoleon arrived on the banks of the Narew to direct in person the passage of the Ukra and the attack on Czarnowo. He lined the banks of the Ukra with skirmishers, and ordered his Seamen of the Guard to assemble the boats which had been collected in the Narew at the point where the troops were to cross. The 17th Regiment of the line and the 13th Light Infantry held themselves in readiness to embark in detachments, and behind them Morand's division. The boats were soon ready, and the embarkation commenced; and, protected by the fire of our skirmishers, several companies were safely landed on the opposite bank. They plunged into the thicket and dislodged the Russian outposts which were stationed there. Whilst the transportation of the troops was being effected a party of the Seamen of the Guard, with the help of pontoneers, was constructing with all haste a bridge of boats. This work was finished by seven in the evening, and Morand's division crossed by it and went to strengthen the two regiments which had already crossed the river.

The Russians were overthrown, and beat a hasty retreat after the capture of the village of Czarnowo.

The weather was now becoming worse and worse, so Napoleon decided to make Warsaw his headquarters and winter there, with every intention of continuing the campaign directly the fine weather set in. In the meantime he organised a new army corps, which he sent under the aged Marshal Lefebvre, to besiege Danzig. But the Russians again taking the field forced him to quit his winter quarters. He hastened to reach them,

[1] *Les Vélites de la Garde:* A corps of young soldiers formed by Napoleon in 1805 as a school or nursery for officers for the line regiments, and non-commissioned officers of the guard.

and attacked them at Eylau, where took place one of the most bloody battles of the campaign. The Russian Army decimated fell back, and Napoleon, also much weakened, decided to wait for the fine weather and took up his quarters at Osterode, grouping his *corps d'armée* around him in readiness to be called out in the event of the Russians re-attempting the offensive. At the same time he placed himself in communication by means of the fortresses of Marienberg and Marienwerder with Marshal Lefebvre's force which was besieging Danzig. To attain this end Marshal Bessières, who commanded the Imperial Guard, was ordered to send a company of Seamen of the Guard to Marienwerder to make a bridge there.

Commanded by a capitaine de frégate they seized forty boats, which they found at Graudenz, and passed by night under the citadel of that place on the way to Marienwerder. This skilful feat was performed by the Seamen of the Guard with so much adroitness that it was mentioned in the 77th despatch of La Grande Armée (Firkenstein, 29th May, 1807). A naval officer was also sent to Elbing to ascertain both the depth of the harbour and of the Friche-Haff, an inland sea which stretches between Danzig and Königsberg, and what kind of vessels could be fitted out there; to perform this duty, Marshal Lefebvre, having applied for some Seamen of the Guard, a detachment of five picked men was sent to him at Danzig under the charge of a midshipman. Posted on high ground from whence they could command a view of the sea, their duty was to ascertain the strength and type of all vessels which appeared before Danzig. The midshipman in command was ordered to report daily to Marshal Lefebvre and to the Major-General. Napoleon now ordered General Déjean, Minister of War, to despatch immediately from Boulogne the remainder of the Battalion of the Seamen of the Guard to Danzig by way of Cassell, Magdebourg, and Stettin. This battalion was timed to arrive early in June, so Napoleon, whilst awaiting its arrival, mustered all the sailors he had with him in La Grande Armée at Danzig, with the exception of ten men who were left at Elbing to guard the vessels there.

Danzig capitulated on May 26th, and a few days later the Seamen of the Guard, under Captain Daugier, arrived, and were told off for duty in the roadstead and the fortress. An officer was given command of an English corvette, which had been captured in the harbour a few days previously. She was manned by our sailors, and ordered to cruise off the entrance to the harbour. Besides this two large pinnaces were manned, also some others were brought from Elbing, and a flotilla of eight vessels was formed, which cruised in the Haff for the purpose of attacking the enemy's ships. Danzig could now count on a garrison of 600 sailors.

Napoleon then marched on Königsberg, and having defeated the Russians at Guttstadt, Heilsberg, and Friedland, he entered the town, which was evacuated on our approach. He followed up the Russians as far as the Niemen, where, the river only separating the two armies, the King of Prussia and the Emperor of Russia sued for peace, which was signed at Tilsit on the 8th July. The evacuation commenced at once. The

Seamen of the Guard were sent to Stettin to serve under Marshal Brune at the siege of Stralsund. This place surrendered on the 21st August. On the 30th August, 1807, Napoleon, who had returned to France, wrote from St. Cloud to Marshal Berthier desiring him to order the Battalion of the Seamen of the Guard to go to Hamburg as soon as they were of no further use at Stralsund. The battalion then returned to France, and was present at the magnificent reception given by the municipality of Paris to the Imperial Guard on their return to the capital, November 25th, 1805.

(To be continued.)

NAVAL AND MILITARY NOTES.

NAVAL.

HOME.—The following are the principal appointments which have been made: Captains — G. Pollard to "Malabar"; R. Humpage to "Pallas"; E. H. Gamble to "Endymion." Commanders—L. de Wells to the "Ferret"; R. G. O. Tupper to "Boxer"; H. M. Tudor to be a Naval Attaché for Europe.

On the 5th ult. was launched at the Fairfield Shipbuilding Co.'s yard at Glasgow the "Diana," one of the new second-class cruisers. Her dimensions are as follows:— Length between perpendiculars, 350 feet; extreme breadth, 54 feet; displacement, 5,600 tons. The hull is built of Siemens-Martin steel. A cellular bottom extends the full length of the engine and boiler spaces, and fore and aft watertight flats and magazines continue the double bottom right to the stem and stern. Under the protective deck the side compartments for the full length of the boiler space are utilised for stowing fuel, and additional cross-bunkers are introduced at each end of these compartments, completing a case-ment of coal right round each set of boilers. The hull is subdivided by longitudinal and transverse bulkheads, the doors in which have been reduced to a minimum and may all be worked from the main deck as well as from below. The vessel is sheathed with teak and coppered, and to insure her steadiness bilge keels for about half the length of the vessel have been fitted. The protective deck is from 1½ inch to 3 inches in thickness, and is arch-shaped in section, with a steep curve towards the side of the vessel, which it meets at an angle of 45°, and covers the propelling and auxiliary machinery, the boilers, magazines, etc. An armoured citadel of Harveyized steel affords additional protection to the engines from raking fire, and the reserve bunkers, being on the protective deck over the machinery space, tend further to lessen this danger. The coal capacity is nominally 550 tons. The armament of the "Diana" will consist of five 6-inch, six 4·7-inch, eight 12-pounder, and several smaller guns, all Q.F., with three torpedo-tubes, two forward submerged and one aft above water. The propelling machinery consists of two sets of triple-expansion engines of the most approved description, with cylinders of 33 inches, 49 inches, and 74 inches diameter and stroke of 3 feet 3 inches, designed to develop 8,000-H.P. with natural draught, for a speed of 18·25 knots, and 9,600-H.P. with a moderate allowance of forced draught, for a speed of 19·5 knots. The engines will drive twin propellers of bronze, and steam will be supplied from eight single-ended boilers of the ordinary Admiralty type, working at a pressure of 155 lbs. per square inch. The "Diana" is fitted with two masts, each provided with a military top. The additions of these tops necessitated an increase of beam over that specified in the original designs, to ensure a sufficient range of stability. Excepting the difference in rig and beam the new cruiser is almost identical to the "Eclipse" and her sisters. The "Diana" will be fitted out as a flag-ship, and specially equipped for service on remote stations. Her total cost for hull and machinery is estimated at about £300,000, and she will carry a crew of 320 officers and men.

The Admiralty have directed that the second-class cruisers "Juno" and "Doris" are, when sufficiently far advanced, to be sent to Devonport, where they will undergo their steam trials and be fitted out for sea. These vessels, which are being built by the Naval Construction and Armaments Company, Barrow-in-Furness, were originally intended to be of precisely the same type as the "Talbot," building at Devonport. During the construction of the latter,

however, it has been found that the original designs could be modified with advantage, and the alterations which were from time to time suggested during the early part of the "Talbot's" construction have been approved for the "Juno" and "Doris." So far as length, mean load draught, and displacement tonnage are concerned, the vessels are exactly similar, but the "Juno" and "Doris" will have 6 inches more beam than the "Talbot." This additional breadth will be a decided advantage, especially when it is considered that the contract provides for a speed of 19·5 knots, with an I.H.P. of 9,600—the same as is expected to be realised with the "Talbot." The armament of the improved "Talbots" will consist of five 6-inch, six 4·7-inch, and sixteen smaller Q.F. guns, four Maxim machine-guns, and three 18-inch Whitehead torpedo-tubes, two of which will be submerged. The "Juno" and "Doris" are each to be completed for sea at a cost of £270,000, whereas the "Talbot," which is the smallest of the type, is estimated to cost £306,000. The "Juno" is expected to arrive at Devonport in July next, and the "Doris" in October.

The construction of the third-class cruiser "Proserpine," is to be begun at Sheerness at the end of January. She is to be a sister-ship to the "Pelorus," now building at the same yard, and will have a displacement of 2,135 tons. Her machinery—indicating 5,000-H.P. under natural, and 7,000-H.P. with forced draught—is to be made at Keyham. The armament of the "Proserpine," like that of the "Pelorus," will comprise eight 4-inch Q.F. guns and eight 3-pounder Q.F. She will also be fitted with two tubes for the discharge of 16-inch torpedoes.

The first-class cruiser "Endymion," recently attached to the Channel Squadron, was commissioned at Chatham on 14th inst. by Captain E. H. Gamble, for the purpose of conveying to the Australian Station new crews for the third-class cruiser "Royalist"; the first-class gun-boat "Goldfinch;" and the surveying vessel "Penguin."

The torpedo-boat destroyer "Haughty," built by Messrs. Doxford, of Sunderland, has lately completed her trials. A speed of 33 miles an hour was obtained, the revolutions of the main engines at the time being 392. During the whole of the trial the machinery worked satisfactorily.

The torpedo-boat destroyer "Lynx," at Devonport, is to undergo a series of experimental trials during the time she is in commission, for the instruction of engine-room ratings. The first trial will be made off Plymouth shortly, when endeavours will be made to attain an I.H.P. of 4,500, an usually high rate of steaming for such delicately constructed vessels. The results will be awaited with interest, as the "Lynx" was built and engined to develop an I.H.P. of 3,600. On her official trials this power was realised, and the vessel attained a speed of over 27 knots.

The Admiralty have commissioned Messrs. Humphrys, Tennant, and Co., to construct a set of six Niclausse water-tube boilers for the torpedo-gunboat "Seagull." This type of boiler is fitted in the French cruiser "Friant." A set of similar boilers, to supply steam for 10,000-I.H.P., is to be fitted in a cruiser now being built in Germany for the Russian Government.

The results of water-tube boilers in torpedo-boat destroyers have proved so satisfactory, that the Admiralty have now decided to extend their use to torpedo-boats. The special types to be selected for this purpose have not yet been decided on, but the boats to be supplied with them have been placed in dockyard hands for reboilering. At Devonport "No. 80," first-class torpedo-boat, is the vessel to be experimented with. She is chosen because her old boiler was in a very bad state, and would have needed renewing under any circumstances. In consequence of the large amount of work in hand at Devonport, together with the large sum (not provided in the current estimates) necessary to reboiler the vessel, the Admiralty have directed that she is not to be taken in hand before the new financial year, when provision will be made for her refit in the new

estimates. It is estimated that the cost of removing her old boiler, and substituting for it one of the water-tube type, will cost at least £6,000. The other boats to be similarly dealt with are "No. 41" and "No. 42," of the Portsmouth torpedo flotilla.

Much has already been done in the initial stages of the work connected with the new first-class cruisers "Europa" and "Diadem," to be built at Clydebank and Govan respectively. Large quantities of material have been ordered, and instructions have been received by the Steel Company of Scotland to proceed with castings for the ram stem, and the stern post of the first-named vessel. It has transpired that the separate offers for these two ships and the "Niobe," a similar vessel to be built at Barrow-in-Furness, were within £4,000 of each other. Where a sum of £432,000 is involved, such close estimating by independent firms is somewhat remarkable.

During the re-fit of the "Phaeton," cruiser, at Devonport, her armament of 6-inch breech-loading guns is to be replaced by Q.F. guns of the converted type. Her magazines are to be altered for the reception of cordite ammunition and her shell rooms for the stowage of the new pattern projectile.

As the result of further tests with cordite charges, the Ordnance Committee have expressed the opinion that quick-firing ammunition filled with cordite for the 6-inch and 4·7-inch guns may be stowed in ships' magazines without boxes of air-tight compartments, provided the temperature of the magazine does not exceed 100° Fahr. In order to further test the ammunition under these conditions, the Admiralty have directed the dockyard officials at Devonport to select a first-class and a second-class cruiser in commission and alter their 6-inch magazines so that ammunition may be stowed under the plan approved by the Ordnance Committee.

The new torpedo-boat destroyer "Hart" has completed her three hours' full-power trial at Portsmouth. The draught forward was 5 feet ½ inch, and aft 7 feet 6¾ inches. There were 196·11 lbs. of steam in the boilers, and with a mean air pressure of 2·75 inches the engines gave a total H.P. of 4,143, propelling the vessel at the rate of 27·075 knots. The coal consumption per I.H.P. per hour was 3·2 lbs. She is now to be fitted for trials with oil fuel. The system to be tried is what is known as the "spray," the oil being injected mechanically into the fire-box, either to assist the coal fuel or to act solely as the heat producer. Mr. Holden, the locomotive superintendent of the Great Eastern Railway, is the patentee.

The Admiralty propose to commission the third-class cruiser "Pearl" at Devonport, in February to effect the relief of naval ratings on foreign service. The "Pearl" is a third-class cruiser of the same type as the "Phœbe" and "Philomel" on the Cape of Good Hope station, and it is principally to test several new features introduced for improving the sea-going efficiency of small cruisers that she is to be appropriated for this service. In addition to a system of electric fans which are being fitted on her lower deck to improve the ventilation, several alterations have been made in her machinery department and deck fittings. An interchangeable derrick which can be worked on either mast has been introduced with a view to facilitating the stowage of the sheet anchors. If the alterations prove to be improvements on the old fittings, similar work will be carried out in the "Phœbe" and "Philomel" at the Cape Dockyard, the plant being provided from Devonport.

The third-class cruiser "Pallas" is commissioned to relieve the third-class cruiser "Canada" on the North American station; this is an advantageous change of ship, the "Pallas" being a much faster ship and having a Q.F. armament.

An improvement in connection with the service of hydraulics in our battle-ships is in course of adoption that will speedily obviate a serious drawback that has hitherto attended the use of the machinery in cold climates. In the first instance, it should be explained that the operations of training, loading, etc.,

besides the free manipulation of a barbette, with its brace of heavy guns, is effected by water pressure, which derives its initiatory force from a steam pump of great power situated immediately beneath the barbette, and as low under the protected deck as the structure of the ship will allow. The advantages of water as the medium for setting in motion the local machinery has long been recognised by engineers; it is not subject to the vagaries of steam; it maintains under normal conditions a constant and equable pressure on the valves, and controls the heaviest cannon with the greatest rapidity and precision. Copper is employed generally in the system of rods and valves, but all the high-pressure pipes where greater tenacity is required are prepared from a manufactured material known as manganese bronze. This composition is considered one of the finest alloys ever produced. Almost as rigid as steel, it is ductile enough to "give" as necessary in the working parts. On the other hand, it quickly deteriorates when subjected to extremes of temperature, and unless a constant velocity be maintained, when the thermometer falls to freezing-point, the water must be drawn off into the reserve tanks below. Ice forming in the pipes, through neglect of this precaution, has from time to time resulted in much damage to the machinery, when a cumbersome system of hand-controlling gear would have to be relied on, while, in the event of a pipe bursting, the guns themselves might be rendered useless. The disastrous effects of a low temperature will now be remedied by the simple expedient of an extension of the steam system as already adopted in the Russian fleet. Copper piping will be introduced to follow the circuitous leads of the pressure pipes wherever necessary, and by the steam within setting up a circulation of hot air, the water will be maintained at a working level of temperature. The "Empress of India," while in dock, will be fitted with this slight but important addition to her auxiliary machinery, and all barbette and turret-ships as they pass through dockyard hands for repair will be similarly provided.—*Naval and Military Record, Times*, and *Globe*.

It is reported that Messrs Yarrow have offered to certain foreign Powers to construct for them 32-knot torpedo-boat destroyers, while at the same time they have refused to tender for any of the new destroyers ordered for our own Government, and it is also stated on good authority that the "Sokol," lately completed by the firm for the Russian Government, embodies improvements in construction which are not to be found in our own boats, even of the latest type.

FRANCE.—The following are the principal appointments which have been made: Rear-Admirals—de Courthille to command of Second Division of the Squadron of the North; Fournier to command of the new Training Squadron for Officers; Roustan to command of Algerian Naval Division. Capitaine de Vaisseau—Besson to "Brennus." Capitaines de Frégate—Davin to "Condor"; Barry to command of *Défense Mobile* at Rochefort.

The new battle-ship "Brennus" has at last been commissioned, and in spite of the defects in her machinery will probably soon leave for the Mediterranean. These defects show themselves when the ship is run at her highest speed, and it is believed they can only be remedied by taking the engines entirely to pieces and setting them up afresh; as the ship under natural draught can steam as fast as any of the battle-ships now forming the Active Squadron of the Mediterranean Fleet can under forced draught, it has been practically settled to defer such a heavy piece of work until some of the other new battle-ships are ready for sea.

The new battle-ship "Charles Martel" was commissioned at Brest on the 10th inst., with a very reduced complement of officers and men for her trials, and the new torpedo-aviso "Casabianca" has been commissioned at Rochefort for the same purpose.

The first keel plates of the new battle-ship "Gaulois" were laid on the 2nd inst. at Brest on the same slip from which the "Charlemagne" was launched last October. It is hoped that the work of construction will be pushed on rapidly, as a good deal of the frame work with her sternpost is completed and ready for setting up.

One of the new under-water torpedo-tubes intended for the new battle-ships of the "Charles Martel" class has been fitted on board the "Gironde" at Toulon, and exhaustive experiments are being carried out with it.

It has now been decided that the new second-class battle-ship "Henri IV." will not be commenced before the second half of the year, and she is to be completed by the 1st April, 1900; she is to be a coast-defence monitor, and her dimensions will be as follows:—Length, 276 feet 3 inches; beam, 65 feet; and a displacement of 7,000 tons. The engines are to develop 7,000-I.H.P. under forced draught, giving a speed of 15 knots, with a radius of action at 10 knots of 6,000 miles. Her armament will consist of one 30-centimetre (11·8-inch) gun in a turret forward, ten 14-centimetre (5·5-inch) Q.F. guns in a central battery, two large-calibred howitzers for high-angle fire, eight 3-pounder Q.F. guns, and two machine-guns. Her cost is to be 15,679,078 frcs., of which sum 419,000 will be expended this year, and she is to be laid down at Cherbourg. The new first-class armoured-cruiser takes the place of the one known as "D 2," and is to be called the "Jeanne d'Arc." She is to be 465 feet long, with a beam of 63 feet, and a displacement of 11,000 tons; there are to be three screws, the combined engines developing 28,000-I.H.P. under forced draught, giving a speed of 23 knots, the boilers being of the Normand type, while her normal coal supply will give her a radius of action of 10,000 miles at 10 knots, which may, under exceptional circumstances, be increased to 15,000 miles. Protection will be afforded by a complete 6-inch belt, rising 2 feet 3 inches above the water-line, above which will be another belt of plating 3 inches thick, the armoured deck being 2 inches thick; the total weight of armour will be nearly 2,000 tons. The armament will consist of two 19-centimetre (7·6-inch) guns, and eight 14-centimetre (5·5-inch) Q.F. guns, in armoured turrets, twelve 10-centimetre (3·9-inch) Q.F. guns, sixteen 3-pounder Q.F. guns, and eight 1·4-pounder Q.F. guns, with two Maxims. The cost of the ship is to be 22,073,771 frcs., of which sum 2,520,929 will be expended this year, and she is to be built at Toulon. Both the "Jeanne d'Arc" and the "Henri IV." are being designed by M. Bertin. The two torpedo-avisos to be built have been designed by M. Trogneux, and will be improved "D'Iberville," with better sea-keeping qualities; they are to be called the "Dunois" and the "La Hire," and will be built at Cherbourg, their dimensions being:—Length, 253 feet 6 inches; beam, 27 feet 6 inches; and the engines are to develop 6,500-I.H.P., giving a speed of 23 knots, the boilers being of the Normand water-tube type, while the armament will consist of six 6-pounder Q.F. and six 3-pounder Q.F. guns. Each vessel will cost 3,084,593 frcs. A torpedo-boat destroyer, somewhat resembling the "Hornet" type, with a speed of 25 to 26 knots; a 30-knot sea-going torpedo-boat, the "Thénard," of the "Forban" class; and two first-class boats will be built in private yards.

The new torpilleur-de-haute-mer "Aquilon," built by M. Normand at Havre, was launched last month, and is to make her trials at Cherbourg. The contract for her construction was signed in July, 1893, but her construction has been delayed. The following are her principal dimensions:—Displacement, 120 tons; length, 137 feet 10 inches; beam, 14 feet 9 inches; mean draught, 4 feet 4 inches. The boat has two torpedo-tubes, with a provision of four torpedoes in all, and carries two 3-pounder Q.F. guns in sponsons. The hull is divided into water-tight compartments by eight transverse bulkheads, and there is steerage gearing both fore and aft. The boilers are on M. Normand's multitubular principle, and the two triple-expansion engines are designed to work at 350 revolutions when going at full speed. The boat is lighted throughout by electricity, and the coal supply

is 15·5 tons. The contract trials are to be of eight hours at 14 knots and six hours at 21 knots, with a maximum speed of 25 knots. For every tenth of a knot gained in excess the contractor is to receive a premium of 2,000 frcs. It may be mentioned that the "Flibustier," from the same yard, with a contract speed of 23·5 knots, attained a speed of 26. The cost of the "Aquilon" is £23,000, being little more than half that of the "Forban," which attained the high speed of 31·02 knots at Cherbourg on September 26th.

M. Lockroy, the new Minister of Marine, proposes to make certain changes in his Department, and for administrative purposes the fleet and the work at the Ministry will be divided under the three following heads:—Ships and vessels completed and ready for service; ships and vessels under construction; and the Department of Accounts.

In view of the continual changes and improvements in everything connected with war-ships, it has been decided that the General Staff should no longer confine its duties to the sole work of mobilisation, but should have a determining voice in the Department of the completed ships, and that such Department should be confided to the Chief of the Staff.

The various bureaux, which will be attached to this central "Department" for the "Completed Fleet" are those of the *Personnel* of the Archives, Movements and Hydrographical Services. There will further have to be formed a Bureau of Matériel, comprising three sections: *matériel*, artillery, and torpedoes. The Cabinet will still consist of two sections, the military and the civil, but in future is to be known as the Secrétariat-Général, in conformity with a change which has also been made at the Ministry of War by M. Cavaignac, and it will include a military and civil secrétariat, each having a chief at its head.

The Department of the Fleet under construction will be completely handed over to the corps of Marine Engineers; it will include everything relating to the construction and armaments of ships. This reform carries with it the suppression of the separate Departments of the *Personnel*, Artillery and Torpedoes.

The third group will be formed by the Bureau of Accounts, and the present organisation will continue; two offices, those of the Commercial Marine and the Fisheries, being transferred to the Administration of the Invalides of the Navy, which will form the Department for the Merchant Navy.

In last month's Notes we mentioned that the Court of Enquiry, which sat at Paris to enquire into the circumstances of the grounding of three battle-ships of the Active Squadron when coming to an anchor in Hyères Roads, had reported to the Minister of Marine, exonerating Vice-Admiral Gervais and the captains of the "Amiral-Baudin" and "Courbet," but blaming the captain of the "Formidable"; we can now give some details of the finding of the Court, while the accompanying sketch will show the position of the squadron at the time the accident occurred. The Court considered that the evolution ordered by the Admiral was quite simple, and that there was plenty of room for carrying it out, but that, from some cause not properly explained, the "Formidable" (flag-ship), which was leading, answered her helm too slowly, describing a much larger arc in turning than she ought to have done, with the result that she touched on a bank in 26 feet water, where, however, according to the chart, there should have been 39 feet. Signals were immediately made to the other ships, but it was too late for the "Baudin" and "Courbet" to avoid the bank, and they also grounded. The squadron at the time was in single column in line ahead, and the signal made was to alter course in succession 8 points to starboard, and it was at the moment when she had completed the alteration of course that the "Formidable" went ashore. The Court found themselves unable to account for the ship turning so slowly, as subsequent examination showed that nothing was wrong either with the rudder or steering apparatus generally, but it appears that the ship has a permanent tendency to go off to port. The Court blame Captain Puech of the "Formidable" for not taking the necessary measures to ensure the ship turning in the prescribed

arc; but they point out, however, in extenuation, that as he had only been a short time in command of the ship, he probably had not had time to master her manœuvring qualities and peculiarities; but, in view of the extreme gravity of the situation, which might have resulted from the accident of November 13th, they recommend that formal instructions should be addressed to the commanders of squadrons that in manœuvres at night near the shore a large margin should be allowed for safety in all evolutions. The Minister of Marine has informed Admiral Gervais that he accepts the conclusions of the Court as far as the Admiral is concerned, but he draws his attention specially to the recommendation contained in the concluding paragraph of their Report.

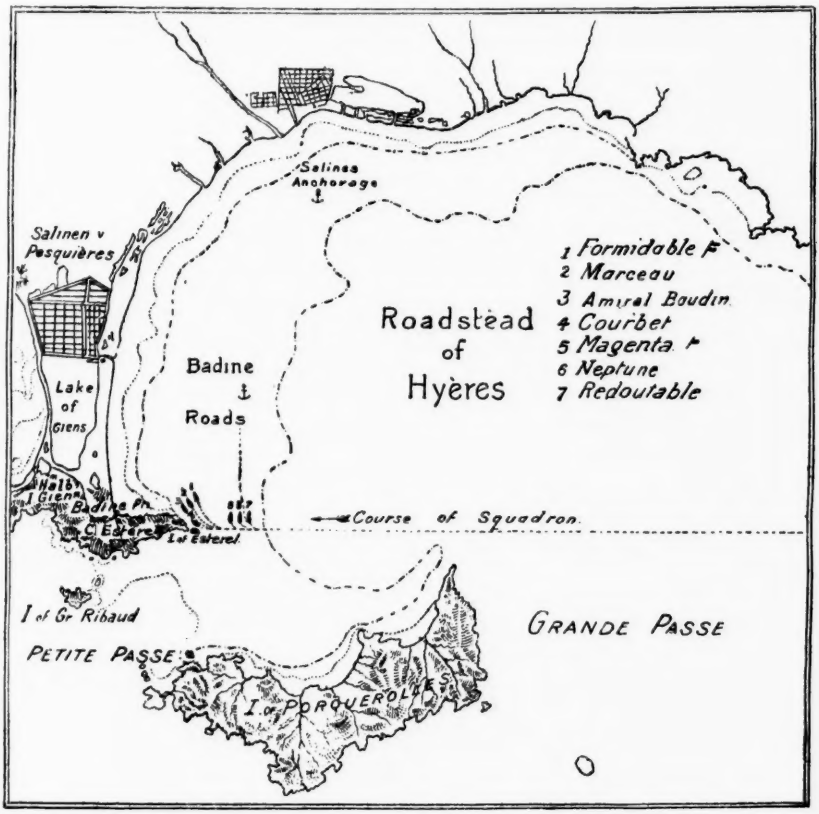


CHART showing Course of French Squadron when proceeding to anchorage on evening of 13th November, 1895, and spot where "FORMIDABLE," "BAUDIN" and "COURBET" took the Ground.

The Minister of Marine has decided on establishing a new school for officers, to be called "L'École supérieure de Guerre de la Marine"; its object being to

permit a fuller study of all the problems connected with modern naval war, and also to train as many officers as possible in the duties and responsibilities that will devolve upon them when called upon to assume command of ships. The school is to be formed upon commissioned ships, which will form an independent squadron under the command of a rear-admiral, who will be styled "Directeur de l'École supérieure de Guerre." The captains of the ships will be allowed to choose their seconds in command, but the other officers will be selected by the Minister of Marine from a list specially prepared. The students will join the school without passing any examination, but after their period of study, which is to last a year, they will be required to pass an examination before a Board composed of one of the Vice-Admirals Commanding Squadrons (President), the Rear-Admiral Director of the School, the Captains of the Ships forming the School Division, and the Chief of the Staff of the School. Officers successfully passing their examination will receive a certificate and be placed on a special list for selection for duty on the staffs, whether afloat or ashore (that is, on the staff of the Maritime Prefects, the Naval Commander in Algeria, and the Officers Commanding the Coast Section); a third of the commands open to Captains, Commanders, and Lieutenants, respectively, will also be reserved for graduates of the School. The following subjects will be included in the course:—Naval Tactics; Organisation for Battle; Signalling; Attack and Defence of Coasts; Submarine Navigation; Theory of Ship Construction, including questions of stability; Water-tight Compartments and the effect of leaks; the *matériel* of the French and Foreign fleets and Naval Hygiene.

The three ships to form the School Squadron are the first-class armoured cruisers "Amiral-Charner" and "Latouche-Tréville," and the second-class cruiser "Suchet." The headquarters are to be at Toulon, and the squadron will take part in the Grand Manœuvres each year, and in manœuvres with the other squadrons, as may be ordered by the Minister. The first Director of the School is to be Rear-Admiral E. Fournier, lately in command of the Algerian Naval Division, and one of the youngest officers on the list of rear-admirals, and he will hoist his flag on board the "Amiral Charner."

Want of space has prevented us sooner noticing some interesting torpedo manœuvres of the Mediterranean Reserve Squadron, which took place during the latter part of last year. The two divisions of the squadron in line abreast approached one another to within a distance of 3,000 metres when the second stopped, and the ships of the first, turning eight points to port, unmasked eight torpedo-boats astern of them, which were to make the attack. It was estimated that during the 2½ minutes the vessels were under fire that a discharge of 700 small calibre projectiles could have been poured upon them. The "Amiral-Duperré," at a range of about 160 yards, and the "Caïman," at about 90 yards, were missed, but the "Indomptable," at 40 yards, was struck by a torpedo just before the funnels. The "Richelieu" and "Terrible," the former making use of her Bullivant nets, were attacked by three boats by moonlight at Lavandou, the range varying between 90 yards and 160 yards. The nets of the battle-ship arrested the three torpedoes discharged, but the boats would have been subjected to a hail of some hundreds of projectiles. So confusing were the search lights to those on board the "Orage" that she signaled for these to be extinguished, since the helmsman could no longer safely direct her course. At Brégançon the "Amiral-Duperré," "Caïman," and "Indomptable" were attacked by six torpedo-boats of the mobile defence in two groups. The attack of the first group was a complete failure, not one torpedo finding its mark at short distance, and it was estimated that the boats would have been destroyed before coming within effective range. In the attack of the second group, the "Indomptable" was hit by a torpedo from "No. 123" at 80 yards, but here again it was necessary to extinguish the search lights in order to make the navigation safe for the boats. —*Petit-Var*, *Le Yacht*, *Le Temps*, and *Journal des Débats*.

GERMANY.—In view of the late crisis, it may be interesting to briefly indicate the strength of the German Fleet. According to the official Navy List, for 1896, just published, the Imperial Navy consists of ninety ships and vessels (exclusive of ships under construction); and these are classed as follows:—First-class battle-ships, four ("Kurfürst Friedrich Wilhelm," "Wörth," "Brandenburg," and "Weissenburg"); second-class, three ("König Wilhelm," "Kaiser," and "Deutschland"); third-class, seven ("Preussen," "Friedrich der Grosse," "Baden," "Baiern," "Sachsen," "Würtemberg," and "Oldenburg"); fourth-class, eight ("Siegfried," "Beowulf," "Frithjof," "Hildebrand," "Heimdall," "Hagen," "Odin," and "Ægir"); and there are thirteen small armoured gun-boats. Cruisers—second-class, three ("Kaiserin Augusta," "Irene," and "Prinzess Wilhelm"); third-class, seven ("Gefion," "Arcona," "Alexandrine," "Olga," "Marie," "Sophie," "Freya"); fourth-class cruisers, eight; gun-boats, five; despatch-vessels, nine; training-ships, fourteen; and ships for special service, nine. In torpedo craft the Imperial Navy is strong; there are eleven so-called division boats, which may be counted as torpedo-boat destroyers; sixty-four sea-going torpedo-boats; sixty-one first-class, four second-class, and sixteen vedette-boats, a total of 156. There are, moreover, eight first-class boats building.

Of the battle-ships, the four first-class ships of the "Wörth" type have already been described in these Notes, but it may be repeated that they are vessels of 10,000 tons, with engines of 9,500-I.H.P., and a speed of 16 knots; the continuous water-line armour-belt is $15\frac{3}{4}$ inches thick, tapering to $11\frac{3}{4}$ inches, while the three barbettes, in which are mounted six 28-centimetre (11·02-inch) guns are protected by $11\frac{3}{4}$-inch plating; the secondary battery is weak, consisting only of six 10-centimetre (3·96-inch) Q.F. guns, unprotected except by $2\frac{1}{2}$-inch screens, and much crowded together, and there are sixteen small Q.F. and machine-guns. The three second-class battle-ships are old-fashioned ships, two having central batteries similar to the "Hercules," and the third, the "König Wilhelm," being a broadside ship of the early type, but having a 12-inch water-line belt with 8-inch armour over the battery.

Of the seven third-class battle ships, the four vessels of the "Baden" class are citadel ships something after the "Colossus" type, but the heavy guns instead of being in turrets are arranged en barbette, four 26-centimetre (10·3-inch) in a casemate aft, and two other 26-centimetre guns in a barbette forward; the armour varies in thickness from 16 inches on the water-line to 10 inches on the barbettes, they have no secondary batteries; of the remaining three ships, two are old turret-ships launched in 1874, and the third one, the "Oldenburg," is a broadside ship.

The eight fourth-class coast-defence ships are all new, and constitute a distinct type of ship; they are vessels of 3,500 tons, with engines of 5,000-I.H.P., and have a speed of 16 knots; they are protected by a water-line armoured belt 10 inches thick, and 7 feet 6 inches deep. The armament consists of three 9·4-inch guns, one each side forward in 10-inch armoured barbettes, and the third in a similar barbette aft amidships, and of six 3·4-inch Q.F. guns on the broadside, protected by shields; they are said to be very sea-worthy vessels, and one was not long ago sent to the Coast of Marocco. The armoured gun-boats are vessels of 1,000 tons, all old, of slow speed, carrying one heavy gun forward, and are only intended for coast service. In cruisers the German Navy is very weak; the finest, the "Kaiserin Augusta," is a vessel of 6,300 tons, with engines of 12,000-I.H.P., and is said to have a speed of 21·8 knots; two others, the "Irene" and "Prinzess Wilhelm" of 4,400 tons, have a speed of 18 knots, while the "Gefion," a third-class cruiser of 4,000 tons of a new type, lately made twenty on her trial trips; the other cruisers are small and obsolete vessels, with the exception of the six new third-class cruisers of the "Cormoran" class, which, of about 1,750 tons displacement, have a speed of 16 knots. All the German battle-ships, with the exception of the second-class battle-ship "Kaiser," at present in China, are at their home

ports; two of the fast cruisers, the "Irene" and "Prinzess Wilhelm," are in China; six third-class cruisers, six gun-boats, and the four training frigates are also abroad in the different parts of the world. Two of the third-class cruisers, the "See-Adler" and the "Condor," are at present at Delagoa Bay.

The *personnel* of the fleet last year amounted to 1,034 officers of all ranks, with 21,487 men.

THE NETHERLANDS.—The Naval Estimates for 1896 amount to 15,758,026·4 gulden, showing a slight decrease compared with those for last year. The following are some of the principal items:—Administrative purposes, 387,232·50 florins; ship construction and *matériel* for the fleet, 6,500,115 florins; the *personnel*, 5,036,945·5 florins; pilot service, hydrographical service, etc., 2,016·816 florins; half pay, pensions, etc., 1,756,917 florins; and unforeseen expenses, 60,000 florins. The amount demanded for ships building, etc., amounts to 250,850 florins more than last year, and there is also an increase of 1,150 florins for the *personnel*. The shipbuilding votes are to be expended on the forwarding of the three new protected-cruisers "Holland," "Zeeland," and "Friesland." In the Budget-statement the Minister declares that, with the exception of the armoured ships "Reinier Claezen," "Evertsen," "Kortenaer," "Piet Hein," the protected cruisers "Koningin Wilhelmina" and "Sumatra," and some torpedo-boats, the whole fleet is antiquated; further, that as the hulls of many of the older ships have become very deteriorated, their boilers and engines being also worn out, and their fighting value very small, it is wiser to spend money in replacing them in preference to patching them up any more. A complete reconstruction of the fleet is necessary, and a commencement has been made with the larger ships. For general service and for the auxiliary squadron ten new ships, and for home defence six new ships, are necessary. The three new cruisers at present building are to take the places of the "Van Galen," "Koning der Nederlanden," and "Johan Friso," which have been struck off the list of the fleet; the small coast-defence ships "Evertsen," "Kortenaer," and "Piet Hein," when completed, will take the place of the "Buffel," "Guinea," and "Tijger," lately struck off the list of effective ships; while the three new coast-defence ships proposed to be laid down will take the place of the "Schorpion," "Stier," and "Panter." This renewing of the fleet is to take place gradually, and arrangements are proposed to be made, so that three other new cruisers shall be completed by 1900 and three new coast-defence ships by 1902, and another three in 1905; some of the ships to be struck off the effective list will by that time have had over thirty-seven years' service. As three-and-a-half millions of gulden will be required yearly for new constructions, the number of ships kept in commission, both at home and abroad, will be reduced to as small a number as possible.—*Mittheilungen nach Staatsbegrooting Department van Marine.*

Although nominally the Netherlands' fleet is comparatively speaking considerable, yet in reality, as the Minister states in his Report, the number of serviceable vessels is very small indeed. The three new coast-defence armour-clads, "Evertsen," "Kortenaer," and "Piet Hein," now approaching completion, will be useful little vessels, but they are solely intended for coast-defence; they only displace 3,400 tons, their engines of 4,500-I.H.P. giving a speed of 16 knots; protection is afforded by a 6-inch complete water-line belt; the armament consists of three 21-centimetre (7·9-inch) guns, of which two are mounted in a 10-inch armoured turret forward, and the third is aft on the poop, protected by a steel shield; two 6-inch Q.F. guns are in sponsons, one on each beam, and there are further distributed in the tops and other parts of the ships 14 small Q.F. guns, and three torpedo discharges. The other three armoured ships on the list are all nearly thirty years old, small vessels of no speed and but trifling fighting value. There are in addition 13 small single-turreted monitors, one only of which is a new vessel; this is the "Reinier Claezen," launched in 1891, a vessel of 2,479 tons, with

a speed of 12 knots and carrying in a turret forward, protected by 11-inch armour, one 21-centimetre (7·9-inch) gun, and aft protected by a steel shield a 17-centimetre (6·8-inch) gun with eight other small Q.F. guns; the other 12 monitors are all small obsolete vessels to be replaced, as stated in the Minister's Report, as soon as possible.

The only modern cruiser afloat is the "Koningin Wilhelmina," a vessel of 4,600 tons, 5,900-I.H.P., and a speed of 16 knots, launched in 1892; she carries as heavy armament one 28-centimetre (11·02-inch) gun forward in a turret protected by 11-inch armour, and a 21-centimetre (7·9 inch) gun aft protected by a steel shield, two 17-centimetre (6·8-inch) guns, one on each beam, with twelve small Q.F. guns and four machine-guns, there are also four torpedo discharges. A small deck-protected corvette of 1,720 tons, launched in 1890 is permanently stationed in the East Indies; the other frigates and corvettes are quite obsolete. In addition to the monitors, there are available for coast defence twenty gun-boats of the English "Staunch" class, carrying one 28-centimetre (11·0-inch) gun in the bows, and some twenty torpedo-boats.

RUSSIA.—The Tsar was present on the 21st November at the launch of the new gun-boat "Khrabry" from the Admiralty Yard, St. Petersburg, and the new training-ship "Vierny" from the Baltic Works. He also inaugurated the construction of the two new first-class battle-ships, the "Peresvjet" and "Oslablja," by riveting the customary silver plates to their keels.

The two vessels which were launched are comparatively small craft. The "Khrabry" is an armoured gun-boat of the same type as the "Otvajny" and her two sisters, having a complete water-line belt of 5-inch armour with a 1·5-inch armoured deck. Her dimensions are:—Length, 229 feet; beam, 41 feet 7 inches; displacement, 1,492 tons; engines 2,000-I.H.P., calculated to give a speed of 15 knots. She will thus be the fastest of all the fourteen Russian sea-going gun-boats, with an armament of one 9-inch, one 6-inch, and eight Q.F. guns. The "Vierny," training-corvette (1,290 tons), is a composite vessel, having engines, supplied by Belleville boilers, developing 500-H.P., and a sail area of 13,000 square feet. She resembles the "Voin," built at Motala in 1893, and carries six 4-pounders and some smaller Q.F. guns. Her length is 223 feet, with a beam of 36 feet, and mean draught of 13 feet 6 inches.

The two new battle-ships on the other hand are to be the largest yet built for the Russian Navy, having some 200 tons more displacement than the "Tri-Sviatitelia" fitting out at Sebastopol; they are to be 434 feet in length, with a beam of 71 feet 6 inches, a displacement of 12,674 tons, and a speed of 18 knots. The armament will consist of four 10-inch guns, eight 6-inch Q.F. guns, six 5-inch Q.F. guns, and a large number of small Q.F. guns with six torpedo-tubes. The new cruiser building at the Chantiers de Graville, Havre, is to be called the "Svetlana."

At Hebburn-on-Tyne, Messrs. Hawthorn, Leslie, and Co. have also launched the "Kherson," which is to join the Russian Volunteer Fleet. The vessel is 493 feet in length, with a beam of 54 feet and a depth of 37 feet. Her capacity exceeds 6,000 tons measurement and her estimated speed is 19½ knots. The propelling engines work twin screws, and will indicate 12,500-I.H.P. on trial. Steam is supplied by twenty-four water-tube boilers of the Belleville type, working at a pressure of 250 lbs. per square inch. There is accommodation for 1,500 emigrants or soldiers and for over 100 other passengers.

The new coast-defence armour-clad "Admiral Ouchakoff," during a twelve hours' trial at full speed under natural draught, maintained an average speed of 15 knots, with the engines developing 5,764-I.H.P., a H.P. considerably in excess of the contract. A sister-ship, the "Admiral Apraxine," is so far advanced at the new Admiralty Yard, St. Petersburg, as to be nearly ready for launching. The silver keel-plate of the "Admiral Apraxine" was affixed by the Tsar so

recently as June 1st, on which day the ceremony also took place for the first-class armoured-cruiser "Rossia," the armoured gun-boat "Khrabry," and training-corvette "Vierny," of which the last two were launched on November 21st. The "Admiral Apraxine," like her two sisters, is designed for coast defence, but is intended also for foreign service if necessary. Her dimensions are as follows:—Length, 278 feet; beam, 52 feet; and with a draught of water of 17 feet the displacement is 4,162 tons. The protection consists of side armour extending for a length of 177 feet, 10 inches thick amidships and tapering to 8·8 inches forward and 7·8 inches aft, the ends of the side armour being united by transverse bulkheads, with 7·8-inch plating forward and 5·9-inch aft. The armament consists of four 9-inch guns, in pairs, in revolving turrets, protected by 7·8 inches of steel, four 5·9-inch Canet Q.F. guns in the redoubt, six 1·85-inch and eight 1·45-inch Q.F. guns on the upper deck, and four of the smaller calibre in the tops. The ship has four torpedo-tubes, one forward, one aft, and one on each broadside. Two triple-expansion engines, supplied by eight boilers, are to give a speed of 14 knots with natural draught and 16 knots with forced draught. The normal coal supply is 215 tons, which, however, may be increased to 390 tons. The "Admiral Apraxine" is named after a famous admiral of Peter the Great's, who commanded the fleet, under the Tsar, at the defeat of the Swedes and the capture of Narva in 1704.

The contract for the supply of the 1,126 tons of armour required for the new battle-ship "Rostislav," building at Nicolaieff, has been given to the Bethlehem Iron Company of Pennsylvania, U.S.A.; the value of the contract in round figures is £120,000.—*Moniteur de la Flotte, Mittheilungen aus dem Gebiete des Seewesens.*

The following remarks about Batum have been furnished by a Military correspondent, who has lately visited that port:—

"Batum is now by far the most important port on the Asiatic shore of the Black Sea, and its enormous development since it was ceded to Russia in 1878 shows that that nation can distinguish the commercial advantages of the places which she annexes, as clearly as she distinguishes their strategical importance.

The harbour at Batum is quite artificial, being formed by two breakwaters run out from the shore, so that the majority of vessels lie in the roadstead and unload into lighters, or wait their turn to come alongside the quay.

The roadstead is protected by forts, two of which, built at the water's edge, were originally constructed by the Turkish Government, but they have been since greatly strengthened and re-armed by Russia. Two new forts have been built on the high ground overlooking the harbour, about seven hundred yards from the shore. These works are most cleverly concealed by the natural growth of trees against the dark background of the hill, and can only be distinguished with the help of glasses. To shell these works would be a most difficult matter, as they have a command of about 300 feet above the sea level.

The depth of water in the roadstead is very great, ships of the largest size can come within a few yards of the shore, and thus take a cargo on board.

The Russian Admiralty are now very desirous of converting Batum into a naval port and dockyard, and with this object in view the question of the compulsory diversion of trade from Batum to Poti is now under consideration, and is a cause of considerable anxiety to the commercial community of Batum.

The Fortress Artillery forms a very large proportion of the garrison of Batum. The physique of the men is very good, the standard of height in the Fortress Artillery being much higher than in any other branch of the army; indeed, the men would compare at no disadvantage with our Marine Artillery.

However, where a war administration commands a population of one hundred millions, it is not surprising that a selected corps should be composed of fine material."

UNITED STATES.—In her official trial trip between Cape Ann and Cape Porpoise, Mass., on October 18th, the new first-class battle-ship "Indiana" maintained an average speed of 15·61 knots for four hours. This is rather more than half-a-knot above the speed required by the Government. The atmosphere was clear, with a light breeze and smooth sea. The run to Boone Island was made against the tide and consumed 2 hours 2 minutes and 70 seconds, the ship passing the last stake-boat at 12·05. The average speed for the 31 knots was at the rate of 15·24 knots per hour. After the turn the speed of the ship was noticeably greater. The first leg was reeled off at an average speed of 15·99, the second at 16·12, the third at 15·85, the fourth at 15·70, and the last ended with a speed of 16·30 knots. It was 2:30:21 when the trial was over, just 1 hour 55 minutes and 35 seconds from Boone Island, and a total of 3 hours 58 minutes and 28 seconds. On the westward run the average speed was 15·99, bringing the average for the trip up to 15·61. During the last fifteen minutes of the run 11,800-H.P. was developed. The average H.P. developed was 9,700, which is 700 more than the contract. The maximum revolutions of the screws were 131; the average, between 128 and 130. The average steam pressure at the boilers was 165 lbs., and at the engines, 161 lbs. In a helm test the ship was turned in a circle of 400 yards.

In a trial outside of Sandy Hook, New York, on December 19th, the new second-class battle-ship "Texas," during a run of a little over three hours, developed an average speed which is put at 17·82 knots per hour, and on her full trial it is expected that even this speed will be exceeded. During the trial it was found that the suction pipes of the drainage system leading from the engine room to the bilge pumps were not large enough to carry off the water used for keeping the bearings cool, and after an official run of 3 hours and 6 minutes the starboard engine was shut down. The primary cause of the stoppage was a hot bearing on one of the circulating pumps. A computation made from unofficial data shows that the main engines developed a sustained average of 8,900-H.P. on an average of 126 revolutions per minute for both engines. This was, with an average steam pressure of about 143 lbs., the designed working pressure being 150 lbs., and an air pressure in the grate pits of 1·8 inch of water.

The day was a perfect one, and the vessel, when running at over 17 knots, gave ample evidence of her stability as a gun platform, with an absence of vibration said to be highly satisfactory.

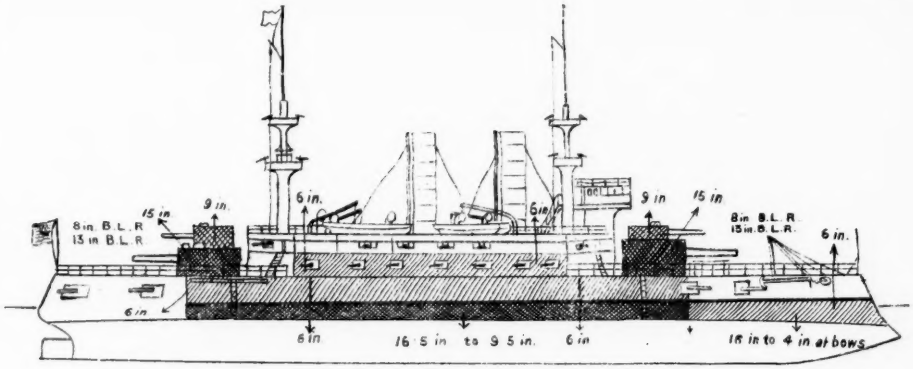
The Chief of the Naval Ordnance Bureau has completed the specifications for the manufacture of armour plates for the two proposed battle-ships. The specifications state that bids are invited for supplying "about 7,000 tons of nickel steel armour, which, in whole or in part, at the discretion of the Department, will be required to be face-hardened." In a number of instances the specifications issued differ from those heretofore sent out by the Department for armour plates. This is especially true of the treatment the plates are to receive. No mention of the Harvey process is made, but the specifications provide that those plates designated to be face-hardened are to be supercarbonised previous to finish forging, after which they are to be reduced to their final thickness by forging or rolling at as low a heat as practicable. Finally, after machining and shaping the plate in such a manner as to secure the closest approximation to the desired shape it is to be hardened. The ballistic requirements of plates representing groups of armour, will be unusually severe. Plates up to and including those tested by the 6-inch gun will be tested without bolting and backing, but rigidly supported. Plates tested by guns above 6 inches in calibre will be bolted to a backing of not more than 12 inches of oak and two $\frac{3}{4}$-inch ship plates. For plates tapering in thickness one of the proposed points of impact may be on the thinner part. When the width of a plate of even thickness is less than 7 calibres of the attacking gun, cracks which extend across the narrow width of the plate shall be waved.

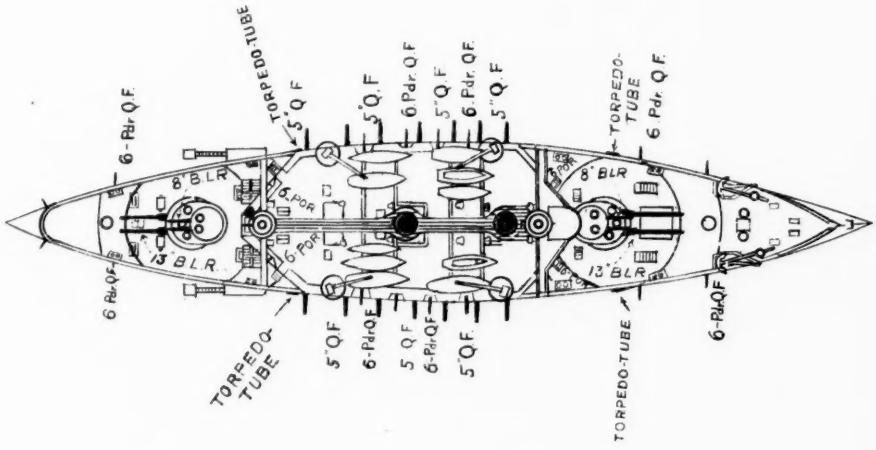
The guns to be used for acceptance tests are to be of the following calibres :—For plates of less than 4 inches in thickness, 4-inch gun ; less than 5½ inches thick, 5-inch gun ; less than 8 inches thick, 6-inch gun ; less than 11 inches thick, 8-inch gun ; less than 14½ inches thick, 10-inch gun ; less than 16 inches thick, 12-inch gun ; less than 18 inches, 13-inch gun. The shells to be employed are those now in service, and the velocities are practically to be the same as those now employed. Of course, for the ballistic trial of 15-inch plates a gun of 12-inch calibre is to be used. There will be 17-inch plates on the turrets of the proposed battle-ships, and these will be fired at with the 13-inch gun. Penalties for delays in deliveries are imposed, and provision is made for such deliveries.

By Act of Congress, approved March 2nd, 1895, provision was made for the construction of two battle-ships, to cost, exclusive of armament, not more than 4,000,000 dollars each, one to be named the "Kearsarge" and the other the "Kentucky." Until launched the ships will be known as battle-ships "No. 5" and "No. 6," since four other battle-ships were authorised before them—the "Indiana," "Massachusetts," "Oregon," and "Iowa." The general dimensions and features of the ships, as designed, are as follows :—Length on load waterline, 368 feet ; beam, extreme, 72 feet 2·5 inches ; freeboard forward, 11 feet 3 inches ; freeboard aft, 12 feet 3 inches ; mean draught, with 410 tons of coal on board, 23 feet 6 inches ; corresponding displacement, 11,500 tons ; speed in knots, per hour, 16 ; I.H.P., 10,000 ; normal coal supply, 410 tons. Batteries : Main, four 13-inch B.L.R., four 8-inch B.L.R., fourteen 5-inch Q.F. guns ; secondary, twenty 6-pounder Q.F. guns, six 1-pounder Q.F. guns, four machine-guns. There will be five torpedo-tubes—two on either broadside, and one bow tube firing ahead. These vessels will draw less water, when fully laden, than any other first-class battle-ship either in this country or abroad—but 25 feet with 1,200 tons of coal on board and all stores and ammunition. This will enable them to reach all the principal navy yards and ports of the country, and will make their docking less difficult.

The 13-inch and 8-inch guns will be mounted in double turrets, one rigidly superposed upon the other. The gun positions will have complete armour protection from a distance of 4 feet below the waterline to the top of the 8-inch turrets. This armour, as well as all other armour used on the vessels, will be of solid nickel steel, Harveyized The lower part of the protection, the barbette so called—will have armour 15 inches in thickness. The armour of the 13-inch turrets will also be 15 inches, except immediately in front, where it will be made 17 inches. The armour protecting the 8-inch guns will be 9 inches, but that also will be made 2 inches heavier immediately in front. The fourteen Q.F. guns will be mounted on the main deck between the turrets, and will be protected by continuous armour 6 inches thick, a splinted bulkhead 2 inches thick being worked between each gun station. A numerous battery of small 6-pounder and 1-pounder guns will be carried, such guns being placed wherever they can fire to advantage.

The protection of the hull against injury to the waterline region will be effected by means of a side armour belt of a maximum thickness of 16½ inches, with a mean depth of 7½ feet, so disposed in reference to the loadline that the vessel, with 410 tons of coal on board, will have 3½ feet of this belt armour above the water, and with 1,210 tons of coal on board will have 2 feet above the loadline. The belt will extend from the stem to the after barbette, and will maintain the maximum thickness from the after end of the belt to the forward boiler room bulkhead, whence it will taper gradually to a thickness of 4 inches at the bow. Protection will be afforded above the main side armour by a steel belt 5 inches thick, extending up to the level of the main deck and running in a fore-and-aft direction from the centre of the forward to the centre of the after barbette. On top of the main side armour belt will rest a flat steel deck, 2¾ inches in thickness ; and forward and abaft the machinery and boiler spaces the deck will be inclined





PROFILE AND DECK PLANS

OF

NEW BATTLE-SHIPS "KEARSAGE" AND "KENTUCKY."

11,500 tons, 10,000 tons, I.H.P.

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J. J. Keliher & Co. Ltd. London

at the sides and the thickness on the slopes increased to 3 and 5 inches. At each end of the thickest part of the belt will be an athwartship bulkhead of armour 10 and 12 inches thick, to protect from a raking fire. In addition to the armour belts, cofferdams filled with compressed, fireproofed American corn-pith cellulose, recently tested with such satisfactory results, will be worked the entire length of the vessel in the region of the waterline. The conning tower will have armour 10 inches in thickness, with a tube 7 inches in thickness leading down to the armour deck for the protection of voice pipes, telegraphs, steering rods, etc.

Throughout the vessel the use of wood is reduced to a minimum, the cabin bulkheads will be made of steel covered with cork sheathing, and every attention will be given to lighting, heating, draining and ventilating the vessels in the most approved and efficient manner. All wood materials of every description will be tested by the electric fireproofing process. As these ships will undoubtedly be flagships, their complements will be 520 persons—officers, seamen and marines. They will be driven by triple-expansion engines actuating twin-screws, each screw being propelled by a single engine having cylinders of 33½ inches, 51 inches and 78 inches diameter, with a common stroke of 48 inches, indicating, together with the engines for the air and circulating pumps, a collective H.P. of 10,000 when making about 120 revolutions a minute. Five boilers—three double-ended and two single-ended—in four watertight compartments, will generate the necessary steam at a pressure of 180 lbs. to the square inch. There will be no speed premiums, a penalty of 100,000 dollars a knot being imposed for failure to reach the contract speed of 16 knots. Battle-ships "No. 5" and "No. 6," will carry their full coal supply of 1,210 tons with the greatest ease. In case of need 400 or 500 tons can be added. It will be sufficient to enable the vessels to steam over 6,000 miles and, at 13 knots, nearly 4,000 miles. However, temporary provision could be made by which 400 or 500 tons extra coal could be carried, with corresponding increase in the radius of action.

In appearance, battle-ships "No. 5" and "No. 6," will resemble the "Indiana" class more than the "Iowa," but the single huge mast, or rather towers, of the "Indiana" will be replaced by two graceful masts, and the short funnels of the "Indiana" will be lengthened in order to enable more power to be developed, and better speed maintained than when working under natural draught alone. Perhaps the most novel feature of these vessels, and the one which is distinctly in advance of other battle-ships, is the over-powering battery of fourteen 5-inch Q.F. guns thoroughly protected by 6 inches of the best armour. Great attention has been given to secure the manœuvring power and steadiness as a gun platform. Reports from the "Indiana" indicate that the improvements made upon battle-ships "No. 5" and "No. 6" will insure even better results. These vessels when completed, with all of their armour and armament, will cost close on 5,000,000 dollars. The time which will be allowed the contractor for the completion of these vessels is three years.—*Army and Navy Journal*, and *Scientific American*.

MILITARY.

HOME.—*Range Firing and Service Practice.*—The incidents in the Transvaal show again, in the most striking manner, that some better guarantee than good practice at the butts is required before one can rely on the practice of men in the field. Both Boers and Colonists are admittedly good shots, even better at game than at targets, and neither side had to undergo the preparation by shell fire, generally deemed indispensable to shake men's nerves, and certainly neither were *individually* anything else but brave. Yet the Chartered Company's men fired away all their ammunition, 110 rounds per man, say 55,000 rounds, without counting Maxim and mountain-gun expenditure, for about ten hits; and the Boers used up

all the rounds they carried, probably 100 a man, with an additional supply sent up during the action, and against an easy target for about 100 hits.

The 38th Brigade, at Mars la Tour, armed with a very indifferent weapon, and only partly supported by artillery, fired, according to Hoenig, some 20,000 rounds only and hit 2,000 Frenchmen, and the French expended 1,600,000 rounds, and scored on an average one German *hors de combat* for 760 rounds.

No soldier can suppose that the raw material of either Boers or their adversaries was inferior as raw material to either the French or Germans. Yet look at the disproportion in the results!

The point to notice is that the best shooting was made by the best disciplined men, and the obvious conclusion is, that steady smart drill is an even more important factor of efficiency than good weapons, individual daring, and individual shooting.

THE AUSTRO-HUNGARIAN CAVALRY.

The following very interesting notes are extracted from the letters on the Austro-Hungarian Cavalry which have recently appeared in the *Times*:—

Squadron System.—"The independence of the squadron as a unit is the first condition of a successful 'squadron system.' Complete power is given to the commander, he being responsible to the colonel of his regiment for the perfect efficiency of his men and horses, the method of attaining which is left entirely to his own initiative. Thus squadron leaders vie with one another in the training of all under their command, in the discipline and good behaviour of their men, and in the appearance and condition of their horses, the method of attaining all of which depends upon their own judicious handling and on their own good system of stable management. The squadron commander is, in fact, an unfettered chief, responsible to his colonel for parading his unit in an efficient state, at the time and place appointed, but unhampered by the endless minor orders relating to feeding, watering, grooming, or hour of turning out, which would deprive him of all initiative. The squadron being taken as the cavalry unit, he holds the position in a regiment corresponding to that of a battery commander within a division of artillery. He thus gains early a spirit of self-reliance and resource—the highest qualifications of a cavalry leader—as well as the experience so necessary to frame him for future higher commands, and a true and just estimate of his capabilities can be formed by his superiors, which is impossible if he be kept within leading strings for a great part of his career. By this system the service is doubly benefitted through the greater efficiency of squadrons as well as leaders." . . . .

"The plan of having certain men permanently unhorsed in peace-time, such as servants, farriers, saddlers, and others employed, appears to be good. It leaves the mounted men complete, save in cases of illness, and available to groom their own horses, without being told off at uncertain times to spare ones, which is disheartening to the most willing soldier. Many a good soldier ceases to try to turn himself, his horse, and his saddlery out smartly when he finds heaped upon his shoulders the burden of three ordinary men, owing to the short numbers of a low establishment." . . . .

Horsemanship.—"The Austrian and Hungarian cavalryman is an excellent rider. He rides as the good horseman rides hunting or hacking—that is, in the most comfortable and the lightest manner possible to the horse. He gives to the motions of limb or head of his mount, without rigidity of body and hand, but at the same time without careless swaying about in the saddle. He rides on all four reins, with due regard to the sensibility of his horse's mouth, and rises in his stirrups on all occasions, whether it be march, manœuvre, or Imperial inspection parade. This rising is anything but unsmart, when carried out with uniformity, after careful and systematic instruction. To those accustomed to look upon this style of equitation

as an indulgence of riding at ease on the line of march the very idea of its toleration on the parade ground savours of a general unsmartness hard to associate with good cavalry. But let them see it properly done by horsemen whose equitation lessons are based upon the system, and their opinions will quickly undergo a change, as they observe with what uniformity the men rise and fall, all bodies very slightly inclined forward at a similar angle. That it is easier for man and mount is incontestable. This, together with the flexible and rational method allowed of treating the horses' mouths, may account, to some extent, for the splendid condition of the animals, in spite of severe work and an average weight of over twenty stone upon their backs. The Austrians have to support them in these points their almost general adoption by the other Continental States of Europe." . . . .

Saddlery.—"The saddlery of the Austro-Hungarian cavalry is excellent, and the method of carrying the kit compact and practical. The general points which strike the observer in comparing the Austrian with the English cavalry saddle are—the arches are higher and the side bars longer and broader, the kit being strapped well up round the arches and supported off the back on the bars, thus leaving a free current of air, from pommel to cantle, under the saddle. The appearance is very compact, as all the kit is carried in two large and capacious wallets in front, the cloak strapped round the rear arch with a canvas sack, opening in the centre, containing the day's supply of oats close under it, and the mess-tin on the top. A certain proportion of air and waterproof sacks are carried over the cloak, to be used in the passage of rivers. The picketing peg is fastened to the near wallet, the leather thong, passing by the near side attached to the ring of the head collar, thus ready for immediate use, while on the off wallet is carried a capacious canvas bucket, strong and holding several gallons. The farrier's tools are strapped in leather cases on the wallets, and every man has with him two spare shoes and sets of nails. Every fourth man is provided with a leather-covered tin case on the near side, containing the groceries, condensed soup, and coffee, etc., for his section.

Beyond these articles nothing is fastened to the saddle, which rests on a thick felt blanket folded in four—the new pattern will be folded in six—and the absence of sheepskin packs, besides adding to coolness and air-passage, gives to the turn-out a smart and tidy appearance.

It is very noticeable how far back the horses carry the girth—several inches further than in the English cavalry. This is on account of the shape of the side boards, which are longer and lie flatter to the back, on the folded blanket, the seat of the saddle being longer also, and the weight, consequently, more evenly distributed, instead of pressing forward on the withers. That the load should be thus distributed over the weight-bearing surface of the back, is the first condition to be fulfilled by a good saddle, and as the horse's shape alters with hard work and consequent loss of flesh, a saddle with fixed side bars, although fitted to an animal in fat condition, will fail to adapt itself to the shape of the same back after severe strain. It is owing to this fact being thoroughly realised in Austria that the new saddle, now under trial in that country, has a tree with hinged side bars, made of iron and covered with smooth thick leather, which adapt themselves to the shape of any back. The sooner the fact is universally realised that fixed side bar saddles, all made in the same series of sizes, cannot fit all backs under all circumstances properly, the sooner will steps be taken to introduce a saddle, capable of adjusting itself to the whole weight-bearing surface, giving ease to the horse, security to the rider, and an almost complete immunity from sore backs." . . . .

The passage of the Theiss.—"The force of Hungarian cavalry carrying out the experiments operated under a given tactical idea, finally reaching the River Theiss, and, wishing to push the reconnaissance beyond, the advanced squadrons proceeded to attempt a crossing at three places, with a view to deceiving the enemy as to the real point of passage, which was Zenta, where the river—over 300 yards wide—gave full scope for a thorough

trial of the appliances and methods under examination. The first duty devolved upon the pioneer troop, twenty-five strong, which accompanied the advanced squadron in its reconnaissance to this point, and with which moved, also, a light country cart containing all the necessary materials for the construction of a wooden-framed canvas-covered boat. The party quickly laid out on the shelving bank the poles forming the bottom of the frame, lashed them together, and fixed twelve uprights, about 2½ feet long, at intervals round the outer poles, with ropes interlaced between, thus making a strong though light network, outside which was stretched a waterproof canvas, passing over the tops of the uprights and rope lacing, and fastened to the bottom of the frame, inside, at intervals by means of ropes. Nine of the uprights were in this particular case formed by the pioneer hatchets, an invention of the smart lieutenant in command of the 15th Hungarian Hussars regimental pioneers, who thus demonstrated another use to which this part of the equipment could be put, and who proved his ability and resource in more ways than one during these operations. Within forty minutes the canvas boat, capable of crossing twelve men, with saddlery, arms, and accoutrements at one time, was complete, made by five men who carried it to the water's edge and launched it. The work had been performed in a leisurely manner, showing that, if hard pressed, the party could have completed it in five-and-twenty minutes, or, with practice, even in less. Meantime no one had been idle. The other pioneers had removed the saddles; some had stripped themselves, while others were probing with sticks to find a sound point at which to start the horses into the water.

The squadron, hidden away behind trees higher up, was similarly employed or occupied inflating air-tight bags and filling waterproof sacks with straw, hay, or dried leaves. Within a few minutes of arrival a couple of men, stripped and with inflated bladders tied at the back of the armpits, were sent swimming across to make soundings on the opposite bank for a landing-place for horses and boats. There were now some half-dozen sack and bag rafts afloat ready to assist the canvas boats in conveying across the saddlery and arms. Each carried some eight men and saddles every journey. They are of two kinds, as stated—viz., waterproof air-tight inflated and waterproof filled with something light, such as straw or hay. The waterproof filled sacks are an old pattern. They are fastened, nine together, with rope, resting between two frames of planks. These rafts are slow and clumsy compared to the newly-invented inflated air-tight-bag rafts, which are formed by tying nine bags together, resting on a single frame-work of planks, and which move very handily and swiftly through the water. Both kinds, as well as the canvas boats, are propelled by wooden hand paddles, the pioneer spades and shovels being also used for this purpose by the men of the troop. The air-tight bag, some 5 feet long by 3 feet broad and pointed towards the ends, is made of brown canvas, with a mouthpiece at one end for inflation, weighs under 2 lbs., and takes only a few minutes to inflate with the mouth. Fifty bags are carried per regiment, folded over the cloak at the back of the saddle.

The average time occupied in the double journey across and back was twenty minutes, and at each trip the rafts and boat left their contingents of men and saddlery on the other bank, the former taking up a defensive position to cover the crossing of the horses with carbine fire in case of surprise. The passage of the horses was carried out in different ways. A couple of men stripped, with bladders or air-belts fastened under their arms and riding the leading horses, entered the water, urging their mounts with voice and leg until these lost the bottom and started to swim. Meantime the remaining horses of the troop had been led to the water, all four reins knotted on the neck, and as soon as the leading riders had gained a few yards' start the men of the troop, forming a semi-circle in rear of the horses, began to shout, crack whips, and splash, thus driving them into the water, after the leaders, in a drove. In some cases all crossed when once started, but in

others a few turned back and refused obstinately to face the water again. These were at once taken to the rafts and, held by the men by the bridoon reins, were driven into deep water and thus towed across. This plan of swimming horses alongside rafts or light boats appears to be good, as, when once they start in the right direction, they practically take the bark with them at a fast pace as they swim, without any paddling being necessary. The great point to remember when swimming a horse in this way is not to endeavour to hold his head up out of the water. Give him lots of rein. A horse swimming naturally keeps his head very low, his nose pushed well forward, just his nostrils out of the water. In this position he swims best, and if held he should be allowed to place his head as he himself chooses. The mistake was sometimes committed during the operations at Zenta, of endeavouring to hold up the horses' heads as they swam, with the result that they were checked, plunged forward to get free, soon became tired, and in some cases, broke loose when almost completely exhausted. This is a most important point.

Another method adopted in a few instances, was for the horses of each troop —twenty-five in number—to be driven into the water behind rafts with horses held swimming alongside, which thus gave a lead across. Again, the men having stripped rode their horses across from bank to bank, but this plan was not much resorted to.

The methods of swimming horses in droves, already described, furnish other very important lessons. First, it appears that this system could be adopted with any chance of success only at points of passage where the banks shelve gradually to the water's edge, as it would be almost impossible to persuade horses to go down a steep bank and then to take to water, probably deep at such a point. In this case the plan of swimming alongside rafts or boats would have to be adopted. Again, of the two drove systems, the more successful is that where men ride the leading animals into the water. But these riders should be careful to remain on the horses until they are nearly across, as otherwise the leading ones turn immediately to follow the men, as they swim away to a flank and make back to the bank from which they started. In fact, it would be best if the riders never quitted the horses the whole way across. This was brought out very strongly at Zenta, whole droves returning repeatedly because the men left the leading horses too soon, and this point cannot be impressed too forcibly on all who may have to carry out such operations. There is no difficulty in catching the animals on the opposite bank on arriving, as they are somewhat tired and make at once, of their own accord, for the nearest group of horses at their landing place.

It is important that each drove should be ready to follow the last into the water at an interval of a few yards only, to keep up the lead and insure a constant movement until all are across. But, above all, the head of the column must be correctly led. Horses on these occasions are like flocks of sheep, and all follow where the head leads. If once thoroughly scared, it is difficult to make horses take again immediately to broad rivers, in droves, as they repeatedly break back and refuse to face the open water. It saves time in such cases, to resort at once to leading across alongside boats or rafts. It is a point worth noticing that horses are certain to swallow a good bellyful of water in swimming, and would, in consequence, be to some extent unfit for rapid work immediately on landing.

At Zenta no horses were swum with saddlery on and men riding, but it may be of interest to mention that the Russian Cossacks practise this as an ordinary cavalry exercise. Whole squadrons have often been seen by the writer to enter the Dnieper in line, fully equipped, rear rank at increased distance, and to swim across a width of some 250 yards of rather rapid water without confusion or casualty.

The squadron and pioneer troop at Zenta had crossed the Theiss, resaddled, and moved off within two-and-a-half hours of first reaching the bank, including the time taken in constructing rafts and boats. The following morning, more

preparations having been made and two large barges secured, four portable collapsible boats and two corrugated iron pontoons, the compartments of which are separable for transport purposes, were brought up on light wagons which are attached to limbers drawn by four horses, and were formed into rafts, upon which the twelve horse artillery guns and limbers of the two batteries attached to the cavalry brigade were taken across, while the brigade horses, men, saddlery, and equipment were passed over in the manner already described for the squadron on the previous day. The operation was most successfully carried out in the presence of the Emperor and the army staff. It occupied about four-and-a-half-hours, during which twelve guns and limbers and more than 2,000 horses and men were transported across this broad river and formed up on the other side. Through the experience gained at these operations, it is fair to assume that the same passage could be carried out again in three hours. The only articles made use of which did not accompany the troops were the two large barges employed on the second day. The horses of the artillery teams, being accustomed to each other's company, swam over together in most cases very readily. In respect of the banks being gradually sloping the point of passage was favourable, but a sand bank, a few yards after the horses had reached deep water, disconcerted them very much, as they had to plunge for a second time into deep water after touching bottom. The water, also, being very deep in midstream, was extremely cold and very uninviting to horses which had been working or standing under an almost tropical sun for some time previously."

FORDING OF RIVERS.

In order to complete the subject of the passage of rivers, the following extract from Prince Hohenlohe's "Conversations about Cavalry" is herewith added. H. is the Prince himself speaking. S. his friend, now known to have been General Senft von Pilsach :—

"H. Lastly, you mentioned the passage of fords as a special practice. I do not see why this should require special practice. A ford is a place in the river, where the water is so shallow that it can be crossed by wagons or horses without swimming. There is no special art about it that has to be practised. The only difficulty which might present itself would be a dislike to enter the water on the part of the horses; but there are many horses which like to go into the water, and do so fearlessly. Put them at the head to lead, and the others will follow, like one sheep another.

S. That is a wrong opinion, shared by the cavalry to a great extent. When the water is only a few inches deep and not rapid, it can be done that way, but then the ford is not worth mentioning. It is different when the water is so deep that it reaches to the horse's belly or higher, and when the river has some current. If a large body of cavalry rides through it in the dense marching column, it forms a kind of dam from one bank to the other, above which the water will be checked, while below, it flows off and its depth decreases. This causes a constantly increasing pressure of water, which pushes the horse down stream. Now, if every rider follows the man in front of him, this drifting down stream increases constantly; for if the first file drifts down 1 foot, the second file drifts 2 feet; the twentieth, 20 feet. The column soon forms a line concave toward the current, the water being checked most where the current is swiftest. Finally, the pressure of water becomes so great that the horses are no longer able to resist it, and the higher the water rises the more it lifts the horses, so that their weight is insufficient to insure a good foothold. The column is suddenly torn asunder by the force of the water; the horses in the middle of the current are carried down stream, where the river is not fordable, and are in danger of being helplessly drowned.

H. Then the men must so ride through the ford that the road they follow in the water forms an arc convex to the direction of the current?

S. That is easier said than done; for, in the first place, it is a question whether the line followed by the ford and its width admit of making such a convex arc; and in the second place, when the men cover in file, the current will soon make a straight line of the convex arc in the manner just indicated, and finally a concave arc, if the body of troops is large (division) and the crossing takes much time. It is necessary that this body of cavalry ride through the ford by troops, leaving distances between the troops to allow the water to flow off that it may not be checked. Each troop should also have a guide knowing the ford. This can be accomplished if the leader of each troop observes the direction in which the head of the troop in front of him is led, that he may take the same direction and follow the rear of the column. But then, and especially if the current is strong, it becomes necessary that the troop ride through the ford, not in the prescribed marching order, but in the 'pulk,'[1] each horse's head being held above the rump of the next horse up stream. All the horses must also be held with their heads somewhat obliquely to the current, like the bow of a ferry-boat. But it is absolutely necessary that no horse or rider be afraid of the water. They must be familiar with it, in order not to make fatal mistakes from fear of the water or from thoughtlessness. A horse unfamiliar with the water seeks with its front feet for some object on which to gain a foothold. Thus it happens that it tries to place its front feet on the croup of the horse in front, pulling it down and making mischief. It is also to be observed that every man riding for the first time through water is inclined to look down into the water. Where there are eddies or whirlpools, it causes a turning sensation and consequent faulty guidance of the horse. The riders must practise looking steadily at the point on the farther bank which they mean to reach. The rider must incline his body against the stream, so that if he becomes separated from his horse, he may get into the water above the horse, as otherwise he would be in danger. It is also very necessary that the rider preserve the regulation seat and thus give the horse the accustomed hold. He who is afraid of wet feet and pulls up his legs loses all control over his horse at the moment of danger.

H. I see; the troops must previously be well and thoroughly instructed.

S. Instruction alone accomplishes nothing. Practice alone gives safety. Instruction must precede practice, which must progress from the easier to the more difficult. The horses must go into water willingly and confidently. This is necessary, in order that a ford may not prove an insurmountable obstacle to an individual patrol. To cross the ford with a large body, however, it is necessary that all horses know how to swim under the rider, and that the riders have learned to act so that, when the depth of the water increases and the horses have to swim at the deepest places, they may not lose their heads.

H. Did the cavalry of Seidlitz practise fording frequently?

S. In his 'Life of Seidlitz,' Varnhagen von Ense tells us how fording was made the subject of frequent and special practice. They even drilled in the river Ohle, *i.e.*, forming line and breaking into column of threes. I believe, however, that the more frequent practice of fording was also due to the then circumstances. For in those days there were many more fords than now, when the communications are in so much better condition and bridges have been built everywhere. Fords were then crossed every day. The cavalry of those days could also swim, hence it must have had practice. The history of the Seven Years' War furnishes many examples of large bodies of cavalry crossing rivers by swimming."

AUSTRIA-HUNGARY.—*Creation of a new Cavalry Division.*—By order of the Emperor a new cavalry division, having its headquarters at Stanislau, has been constituted, and the command entrusted to Major-General Graf Lamberg, previously commanding the 14th Brigade of Cavalry at Rzeszow. There are now, therefore, five cavalry divisions in the Austrian Army having their headquarters respectively at Lemberg, Jaroslav, Cracow, Vienna, and Stanislau.

[1] A Cossack formation.

FRANCE.—*A new Field Howitzer.*—The following figures relating to the new field howitzer which has attracted the attention of correspondents at the French Manœuvres since 1891, are taken from *L'Avenir Militaire* (No. 2,057). The official designation is "canon de 120 court" calibre, 4·33 inches; weight of shrapnel, 45 lbs.; bursting charge, 280 grammes, F^3 powder; number of bullets, 630 of half-an-ounce each. The weight of the Melinite shell is not given, but is four calibres in length. Three charges of smokeless powder are made up, of 550, 330, and 220 grammes each.

The gun itself is of steel and weighs 1,518 lbs; the carriage without limber, 1,727 lbs.; and the limber, 2,958 lbs.; or 55 cwt. 87 lbs. behind the team, rather a serious load for eight horses, the number we actually saw employed in 1891. The gun is partially enveloped in a hydro-pneumatic jacket to control the recoil, and the maximum play allowed to the barrel is 18·5 inches.

The following figures from French official sources show somewhat of the consequences of the war of 1870-71 in reducing the birth-rate of the French population, and also its gradual recovery:—1890, 310,275; 1891, 300,247; 1892, 277,425; 1893, 343,651; 1894, 330,138. These were the numbers remaining for conscription after all exemptions on statutory or medical grounds had been made, but it must be noted that in 1893 and 1894, under General Mercier's *régime*, the stringency of the medical inspection was considerably relaxed.

It was General Mercier's policy to make the army a school for the reserve, and with this object to pass as many through the ranks as possible. His successor, General Zurlinden, looks on the army as an instrument of war to be kept always in fighting condition, and is reversing his predecessor's practice. The proportion of illiterate recruits is diminishing, but in view of the spread of universal education is still far from satisfactory and difficult to explain. In 1890, the percentage of illiterates was 8·4; in 1891, 7·55; 1892, 7·05; 1893, 6·43; 1894, 5·74. The mean height of the recruits remains steady at about 5 feet 4½ inches; the minimum standard is 5 feet ½ inch.

Effect of the Lebel Bullet in Madagascar.—The *Spectateur Militaire* publishes the following note from a medical officer with the Madagascar Expedition relative to the effect of the Lebel bullet on the Hovas:—"The wounds externally, both of entrance and exit, were so small as to be almost invisible, bleeding entirely internal; but as regards the fractures of bones, I have convinced myself that where the bullet meets a bone it occasions damages only comparable to those of melinite." Further information on this subject is much needed, for the diameter, weight, and velocity of all service weapons being so nearly alike, it is not clear why the French bullet should produce worse results than either the British or German projectiles. It may be noted that the German experiences in Africa against living targets correspond very closely with our own in Chitral.

GERMANY.—*Losses in Battle.*—The following figures, taken from Dr. Engel's statistics of losses in battle 1870-71 show the relative risks run under fire by the different arms and ranks in the German Army during the Franco-German campaign:—

The total number of men hit were: in the infantry, 103,569, including 4,365 officers; in the cavalry, 3,546, including 262 officers; in the artillery, 5,869, including 421 officers; and in the engineers, 402, including 41 officers.

Hence, for every 1,000 infantry hit, 42·1 were officers and 957·9 men; of every 1,000 cavalry, 73·9 were officers and the rest men; and similarly for the other arms, 71·7 and 102 per thousand respectively were officers.

Another table shows the relative severity of the wounds received, and, curiously, the worst are found to occur in the engineers and cavalry. Thus, out of the engineer officers brought in wounded, 22·4 per thousand died within twenty-four hours; of the cavalry, 13·3; and in the artillery and infantry, only 8·5. Amongst the men the percentages were: 18·2 for the cavalry, 14·6 for the infantry, 10·5 for the artillery, the engineers about the same as the infantry.

In the different grades of officers the percentages killed were: generals, 2·564; staff officers, 9·629; captains, 7·89; lieutenants, 8·05; surgeons, ·3. Staff officers here is evidently intended to include all field officers, as no figures for majors and colonels are given.

As regards the chance of being wounded: of every 100 generals, 8·7 were hit; of every 100 captains, 15·1; lieutenants, 17·6; staff, 18·2; surgeons, 2·2.

As regards sickness, the senior ranks felt the hardships most, as might have been expected, their constitutions no longer preserving the adaptability of youth, but the subalterns and captains enjoyed better average health than at home in quarters, the death rate being ·817 for the latter, and ·724 for the former.

Amongst the men the death rate was 1·38, or practically the same as our own death rate in India during peace.

RUSSIA.—*Winter Manœuvres in the Warsaw District.*—The following details of the winter exercises of the 48th Brigade, Warsaw, are of interest. These exercises have taken place annually since 1891, and a marked improvement in handiness is the result. They commence with marching; training the troops gradually, extending their marches from eight to sixteen miles, and culminate in a manœuvre and bivouac between opposing forces.

Circular tents are used, each capable of holding twenty-four men. The tents are surrounded by a snow wall about 1 foot in height. Straw is laid down inside, and in the centre a fire is lighted, two men being told off to watch the sleepers in case of frost bite, and to ward against danger of fire. Two kinds of tents were tried, with large and small openings for the escape of the smoke. In the tents with the small opening (dimensions not given) the temperature was, as might have been expected, higher, but the smoke troublesome.

The following temperatures were taken in the tents during the night :—

		Inside	
	Outside	Small openings	Large openings
12 midnight	− 3° R	+ 10°	+ 6°
2 a.m.	− 1° R	+ 8°	+ 4°
4 a.m.	− 5° R	+ 7°	+ 3°
6.30 a.m.	− 5° R	+ 6°	+ 1°

Before marching out, precautions were taken to ensure that every man wore two shirts, two pairs of drawers, gloves, and earflaps.

It is interesting to compare the above temperatures with those experienced by our own troops in recent campaigns in the Indian hills.

FOREIGN PERIODICALS.

NAVAL.

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 1. Pola and Vienna: January, 1896.—Has not been received up to date of going to press.

DENMARK.—*Tidskrift for Söväesen.* No. 6. Copenhagen: 1895. — "The Naval Commission of 1673" (*concluded*). "The Reconstruction of the Norwegian Fleet, and some remarks thereon." "Submarine Mining Operations in the Oeresound."

FRANCE.—*Revue Maritime et Coloniale.* Paris: December, 1895.—"Formula for finding the position of a ship from the altitude of any two stars." "On the employment of Photography in Oceanography." "The Chino-Japanese War: Deduction from the Battle off the Yalu and the Naval Operations of the Japanese." "Programme of the Re-organisation of the Japanese Navy." "The Electrical Fittings of the 'Bouvines.'" "On Firing at Masked Objects." "Seamen's Maladies and Naval Epidemics" (*continued*). "Foreign Naval Chronicle." "Book Notices." "Sea Fisheries."

Le Yacht. Paris: 7th December, 1895.—"The Higher School for the Navy." "Yachting Notes and News." "Electricity: Its application for the purpose of annealing armour-plates." "The New Russian Cruiser 'Rurik'" (with photograph and plans). "Naval Chronicle, Home and Foreign." 14th December.—"The Reforms of the New Minister of Marine." "Yachting Notes and News" (with plans). "Naval Chronicle, Home and Foreign." 21st December.—"The Budget of the Navy for 1896, the new Constructions." "Yachting Notes and News" (with plates and plans). "The Mercantile Marine, Home and Foreign." "Naval Chronicle, Home and Foreign." 28th December.—"The Necessary Fleet," by Rear-Admiral F. E. Fournier. "Yachting Notes and News" (with plates and plans). "The Mercantile Marine, Home and Foreign." "Naval Notes, Home and Foreign." "Notices of Books."

Le Moniteur de la Flotte. Paris: 7th December, 1895.—"Transports and Charters," by Marc Landry. "The Grounding of three Battle-ships." "The Russian Squadron at Brest." "Colonial Notes." "Naval Chronicle, Home and Foreign." 14th December.—"The Higher School for the Navy," by Marc Landry. "New Regulations for service afloat of Capitaines de Frégate." "The Naval Budget." "The Grounding of the three Battle-ships." "Madagascar." "Naval Chronicle, Home and Foreign." "Book Notices." 21st December.—"Engineer Officers." "Events in the East." "Colonial Notes." "The Contingents of Crews for the Fleet for 1896." "Naval Chronicle, Home and Foreign." "Notices of Books." 28th December.—"The Fournier Cruiser." "The Navy and Parliament." "Colonial Notes." "Naval Chronicle, Home and Foreign."

La Marine Française. Paris: 10th December, 1895.—"The Higher School for the Navy." "Naval Reforms," by H. Montéchant. "The Navy in 1896: Report of Budget Committee." "Naval Chronicle, Home and Foreign." "The Merchant Navy and Foreign Commerce." 25th December.—"The Necessary Fleet," by Rear-Admiral F. E. Fournier. "Naval Reforms," by H. Montéchant (*continued*). "The Navy in 1896: Report of Budget Committee" (*continued*). "Yachting and the English Season." "Naval Chronicle, Home and Foreign."

GERMANY.—*Marine Rundschau.* Berlin: January, 1896. —"Vice-Admiral W. von Wickede"; obituary notice. "The oldest German Book on Shipbuilding." "The cost of ships of the English Navy" (*concluded*). "An Ascent of the Great Cameron Peak" (with map). "Foreign Naval Notes." "Notices of Books."

ITALY.—*Rivista Marittima.* Rome: December. 1895.—"On Auxiliary Cruisers." "Twenty years of the History of the Sicilian-Neapolitan Navy." "The Naval and Military Situation in the Mediterranean." "The Postponement of the Regulations for the Mercantile Navy." "On the Solution of the Ballistic Problem." Letters to the Director:—"Biserta and the Equilibrium in the Mediterranean." "On the Systematising of Guns on board ship"; "The Grand-Dukedom of Tuscany and some Naval Enterprises at the end of the 17th and beginning of 18th Centuries." "Foreign Naval Notes." "The Mercantile Navy." "Notices of Books."

SPAIN.—*Revista General de Marina.* Madrid: December, 1895.—"Elemental Electro-Dynamics." "Modern Naval Tactics." "Vocabulary of powders and modern explosives." "The funnels of Ships-of-war." "The Navy in Cuba." "The Winds and Currents of the Sea." "Physical Geography of the Globe." "Transmission of orders on board ship." "Naval Chronicle, Home and Foreign." "Notices of Books."

MILITARY.

AUSTRIA.—*Organ der Militair Wissenschaftlichen Vereine.* December.—"The late Field-Marshal the Archduke Albrecht." "Rifle shooting and rifle associations in Austria-Hungary." "The defence of Karlsburg in 1849"; from diaries and contemporary documents; by Lieut.-Colonel Franz Rieger. "Book Notices"; a very complete list of military books and index to periodicals for the year accompanies this number.

FRANCE.—*Revue du Cercle Militaire.* 7th December.—"A new form of bread for the Army." "The new German Cavalry Regulations"; translation (*continued*). "A correction to the Mémoires of General Thiébault." 14th December.—War Office Reforms"; based on the letters of "Vetus" and other correspondents in the *Times*. "A Refutation of Tolstoi"; comments by General Dragomirow on Tolstoi's "Peace and War"; worth reading. "The German Cavalry Regulations"; completes the translation, and commences comments which promise to be excellent. 21st December.—Same articles (*continued*). 28th December.—Same articles (*concluded*).

Journal des Sciences Militaires. December.—"Stratégie de Combat," by General Lewal. XXIV., The direction of the attack; XXV., First attacks; XXVI., Resistance to the attacks; Counter attacks; XXVII., Field fortification. "Infantry long-range fire," by Major Josset. "The consequences of the Chino-Japanese War"; the occupation of the Pescadores and Formosa. "The Colonial Army and the Engineers." "A visit to the Swedish and Russian Armies" (*continued*): the Swedish Army; worth reading. "Preparation of the Company for Field Service" (*concluded*), by Captain de Fonclare; a practical article, worth reading.

Le Spectateur Militaire. 15th December.—"The constitution of a central intrenched camp of reserve," by E. Offner; proposes to make a defensible water-way round the north of Paris, from Ville-Evrard by Bondy to St. Denis. "The Army Estimates," by Noel Desmaysons. "The Grand Manœuvres of 1895," by M. de Guymarais. "Decorations, crosses, and medals," by M. de Boissonet. "The effect of the Lebel bullet in Madagascar" (see Notes).

Revue Militaire de l'Étranger. December.—"Les Corps disciplinaires à l'Étranger." "Le développement du réseau ferré en Alsace-Lorraine" (*concluded*). "L'organisation militaire de la Grèce."

L'Avenir Militaire. 3rd December.—"Our Civilian War Minister and the Colonel (retired)"; discusses the case of Colonel Allaire. "The contracts of Dgelfa." "The Colonial Army"; analysis and critique of M. Cavaignac's proposals. "The Army in Parliament." 6th December.—"Masses Noires"; extracts from Colonel Allaire's pamphlet exposing irregularities in the adminis-

tration of regimental funds. "Ivresse Publique." "The Organisation of the Nation in Arms"; review of "L'encadrement de la nation armée"; by C. de L. Paris, Baudoin. The author and reviewer are neither of them satisfied with the existing regulations. "The Article No. 5 of the Law on Recruiting." "Algiers—another 'affaire Chedel'"; report of a court-martial on an officer and N.C.O. at Ouargia accused of torturing prisoners. "Bombardment of Erz-Zibar by H.M. Ships 'Sphinx' and 'Pigeon'"; fire continued for four days and nights, a thousand inhabitants, mostly women and children, killed; with other original details (!). 10th December.—"La Légion d'Honneur." "A new Field Howitzer"; description of the new short 12-centimetre howitzer (see Notes). "Les Masses Occultes"; a circular of the Minister of War relating to mal-administration of regimental funds. "Points Noirs"; list of ships concentrated in the Eastern Mediterranean. "The grounding of the 'Baudin'"; official correspondence. "The Army in Parliament." 13th December.—"Two years' Service"; discussion of current literature on the subject. "Wooded districts and our Maps"; complains of the conventional signs. "The Army Estimates, 1896." 17th December.—"The Re-engagement of Non-Commissioned Officers." "Responsibility in Madagascar"; scene in the Chambers. "The New Pattern Adjutant-Major." "Our Mistakes in Madagascar"; a very severe indictment; worth reading. 20th December.—"The Monroe Doctrine"; wishes to know why it is not enforced against the French on the Brazilian frontier. "Ill-treatment of the Soldiers in the Army." "Public Money and Public Functionaries." "The Standard of the Soldier's Eyesight." 24th December.—"Short Service and the depopulation of the country districts"; combats M. Delafosse's views. "The Troubles of Pandora"; *à propos* of the new dress regulations of the Gendarmerie. "The Anglo-Venezuelan Difficulty." "The Army in Parliament." 31st December.—"The Lebaudy Incident." Officers interested in cypher despatches will find several useful notes on the matter in this and last month's issue.

Revue de Cavalerie. November.—"A Light Cavalry Division in 1805," by M. G. Gilbert, based on the biography of General Espagne at present in preparation by M. Gilbert; very interesting. "Instruction and Leading of Cavalry"; translation of Lieutenant-General von Pelet-Narbonne's work (*continued.*) "Reconnaissances by Officers"; a thoroughly practical article, the distance to be ridden is taken as about sixty-five miles. "Positions or Direction"; should cavalry move from position to position, or advance in a given direction. "Cavalry Officers and the Staff College." "The Mechanism of the Horse's Paces," by M. Maxime Guérin-Catelain, with instantaneous photographs and some admirable reproductions of celebrated cavalry battle pieces by Meissonier, Aimé Morot, etc.; very interesting. "The Military Tournament (*Carrousel*) in Paris, October, 1895"; worth reading.

Revue d'Artillerie. December.—"The Spanish 'Mauser' rifle of 7 millimetres (·27 inches) of 1893" (with plates). "The Corps of Artillery of France," by Captain de Reviers de Maunay; historical study. "Niveaux de pointage sans vernier," by Lieutenant A. Lafay. "Deformations of metals under stresses and strains" (*continued*). "Notes," etc.

GERMANY.—*Deutsche Heeres-Zeitung.* 4th December.—"The French Disciplinary Companies"; from M. Cavaignac's report, already noticed in *L'Avenir Militaire.* "The Saxon Cavalry Division in 1870-71." 7th December.—"Remarks on the Proposed Navy Estimates, 1896-7." "The Saxon Cavalry Division, 1870-71." 11th December.—"The Polish Insurrection in 1863"; review of a translation, and comment on a Russian author, "Gesket-Pusurewski," by Thilo von Trotha. "Im Grossen Haupt-Quartier, 1870-71"; review of Verdy du Vernois' book. 14th December.—"The Training of the Field Artillery for War"; review of Colonel von Reichenau's new book. 18th December.—"The French Colonial Forces," from *L'Avenir Militaire.* 21st December.—"The Prussian

Officers in the Chilian Army"; describes the conditions under which thirty Prussian officers have been allowed to accept service in Chili for a term of two years. "Fourth Battalions and Two Years' Service." 25th December.—"Musketry Instruction and Infantry Fire in Action." "The batteries attached to Memerty's Brigade in the Battle of Noisseville." "Balloons in the Manœuvres and on Active Service"; from Russian sources, not very favourable to the aëronaut.

Militair Wochenblatt. 4th December.—"Address by Professor Dr. von Coler at the Centenary of the Frederic-William Medical and Surgical Institution." The Military Society, Berlin, lecture on "The Campaign of 1806 in West Prussia." 7th December.—"The Cavalry Regulations of the 16th September, 1895" (IV.). "The new French Regulations for Field Artillery." "The Siberian Railway"; its value in an Asiatic War"; does not contemplate practical completion before 1905. 11th December.—"The Cavalry Regulations of the 16th September, 1895" (V.). "The new French Regulations for Field Artillery." "Austrian experiments in the passage of rivers by Artillery and Cavalry." "Military Notes from the Netherlands." 14th December.—"Im Grossen Haupt-Quartier, 1870-71"; review of von Verdy du Vernois' book. "Field Artillery in rear-guard actions." "The French Artillery Field Firing, 1894"; from *L'Avenir Militaire*, No. 2,009. 18th December.—"Review of the Imperial Manœuvres, 1895." "Field Artillery in rear-guard Actions." 21st December.—"The Cavalry Regulations of the 16th September, 1895" (VI.) (*concluded*). 25th December.—"The Decisive Fighting under General von Werder, 1871." 26th December.—"Weak or strong advance Guards." "The New French Field Howitzer." "Organisation, Training, and Leading of Cavalry."

Neue Militairische Blätter.—December.—"The peace strength and recruiting of the French Army in 1895"; a very interesting and able *résumé* of recent changes in France. "Progress in Balloons and Flying Machines, both for War and Commerce"; technical essay, would have been immensely more valuable with plates and diagrams. "The Turkish Railways." "The French Expedition to Madagascar"; worth reading. "The organisation and recruiting of the Russian Army" (*continued*); deals principally with mobilisation. "The Combat at Münden in Waldeck, 13th September, 1760." Correspondence:—France, "Discussion of the Army Estimates in the Chambers." Russia, "Exercises of the Reserve Officers"; "Inspection of the Fortresses and Garrisons in the Warsaw District"; "The cost of the Finnland Contingent"; "Re-organisation of the Horse Artillery of the Guard and of the 8th Cavalry Division"; "A Winter Manœuvre in the Warsaw District"; "Field firing at Bialystok in January, 1895."

Jahrbücher für die deutsche Armee und Marine. January.—"Soldiers' rations in the time of Frederic the Great." "Prince Karl von Nassau-Siegen, a Russian Admiral"; a biographical sketch. "The Plans of Campaign of the Allies and Napoleon in autumn, 1813"; a strategical study on the advantages of "interior lines." "Universities and the Army." "Military life in the Thirty Years' War." "Notes from Russia."

SWITZERLAND.—*Revue Militaire Suisse.* December.—"The Infantry in the Manœuvres of the 1st Corps d'Armée," by Colonel P. Isler; notes the difficulties which occur in marching as soon as artillery forms part of the column. "The Strategic Deployment of the French Forces on their Eastern Frontier"; *résumé* and critique of Colonel Pierron's "La Défense des Frontières de la France"; worth reading.

UNITED STATES.—*The United Service.* December.—"A Plea for the Increase of the Army," by Captain Brinkerhoff; the author contemplates the danger of invasion from either France or England. "Chronicles of Carter Barracks" (fiction). "The Trafalgar Captains," by W. Laird Clowes. "National Defence," reprinted from the *Fortnightly Review*, by Major Arthur Griffiths.

NOTICES OF BOOKS.

New Infantry Sword Exercise.

The appearance of this manual may be said to mark an epoch in British swordsmanship, if only from the controversy it has excited in fencing circles. But as controversy denotes a real interest, the discussion may be welcomed by all lovers of the art. It will doubtless be conceded by all concerned that the "desiderata," to borrow a phrase from the book itself, in a system designed for practical use are clearness, conciseness, and brevity. The main idea should be to inculcate and explain only such movements as can actually be performed with the Service weapon in hand, and to exclude everything that does not lead up to the end in view, viz., to enable the swordsman to use this particular arm, both offensively and defensively, in the most efficient manner. The niceties and conventions of foil-play—invaluable to the fencer in their proper place—only confuse the issue if engrafted upon a weapon of a different mould, while much that is permissible with single-sticks is out of place with a heavy sword. Again, there should be no attempt to present a system of "physical culture" wrapped up in the swordplay. Whirling a rifle overhead may be excellent work for the muscles, but it finds no place in "Position Drill," neither has it been thought necessary to introduce in the bayonet exercise, movements—circling or otherwise—of an unpractical nature. Finally, it should not be forgotten that the introduction of novel features is only warranted by the fact of their being real improvements. To alter is not always to better.

If the foregoing be a correct presentment of the needs of the case, many people will be inclined to affirm that this manual sins in more than one direction. The new doctrine can hardly be said to be clearly set forth, as any man may perceive, if he will try, sword in one hand and book in the other, to set himself into the "en garde" position and thence onwards to the "circling cuts" and the lunge. It is not concise; witness the excursions into the regions, inappropriate to the sword, of "counterparries" and variation of pointing and feinting. Well does Jules Jacob say, simply and truthfully, *On ne parera que par des simples. Les contres si utiles á l'épée ne se font pas au sabre, sauf par exception,* and he goes on to give the all-sufficient reason: *en effet, ils (contres) y sont plus difficiles á exécuter et chassent moins le fer.*—"Le duel au sabre." It is not brief; some seventy pages of closely-printed matter are found necessary to present "the essence of the teaching of Il Cavaliere Ferdinando Masiello of Florence," whereas Captain Alfred Hutton, in his little book, "The Swordsman," manages to tell all about the sabre in a third of the space. What then are the special features of the new system? First of all there is a clear note of physical force throughout. The introduction refers to the muscles and joints employed, while such expressions as "more power," "violent hit," "determined blow," occur frequently. The illustrations, too, depict a massively-built individual of most forbidding countenance—a fusion seemingly of professional strong-man and pugilist. That such a type in the flesh would prove a "slogger" of no mean order can be readily believed, and the knowledge that swordsmen of this nature are being daily and hourly formed at Aldershot and elsewhere, to become, later on, the teachers of British youth at the public schools can hardly be a soothing reflection for any lover of fence. No more dangerous doctrine than this of force can well be preached, disastrous to its exponents in an actual combat with "sharps," and subversive of all good manners in the fencing school. Of "new" features there is an abundance. A "new" on guard position of the sword-arm, "new" cuts and a "new" lunge. Appropriately enough, all this novelty has produced a "new" criticism, and from an unexpected

quarter. The *Lancet* has entered the lists, and the anatomists have been very busy with the "new" movements. Indeed, so cogent are the arguments against Signor Masiello used by certain distinguished surgeons, who are also swordsmen, that no excuse is needed for reproducing them here. Dr. Clinton Dent states that the "en garde" position according to the Florentine style throws unnecessary fatigue on the extensor muscles of the thigh and tends to curtail rapidity of movement. With increased exertion less mobile power is obtained. He condemns the extreme extension of the arm in the position "sword in line," and remarks most pertinently, "a fully-stretched muscle is not able to act quickly." He is very outspoken regarding the new lunge, and judges the claim made on its behalf that it is quicker than its French counterpart to be based on "an anatomical misconception." He sums up by regretting that the French system, based on "sound scientific principles," should be replaced by one "possessing no such advantages." Drs. Chepmell and Savage concur on somewhat similar lines. It is manifest that witnesses of this sort cannot lightly be ignored. To paraphrase a once famous saying, what is anatomically wrong can never be right in fencing. It is quite possible, and indeed most likely, that the argument from anatomy was never taken into consideration by the inventor of the new system. But there it is, bristling with common sense, apparent to the most casual, and demanding immediate attention or refutation. From a purely "cut and thrust" point of view the Masiello system cannot compare with the French. The simple facts that "disengages" are made from the shoulder; that "circling cuts" necessitate the passing of the sword to the rear and a dangerous bending of the elbow in a most exposed position; that the lunge is past all hope of a recovery quick enough to avoid the inevitable "riposte" should the attack have failed; that an absurd convention prohibits all cuts below the hip bone; and that many movements only feasible with the foil or small sword are freely recommended, have only to be stated to secure the rejection of the whole teaching at the hands of all practical sabre-players. It is truly to be regretted that without any corresponding gain, and indeed with actual loss to efficiency, the authorities should have gone "baldheaded," to use an expressive Americanism, into this erring and empirical system. It is notorious that Signor Masiello carries no particular weight in his own country, that all French authority is against him, and that the soundest exponents of fence in England will have none of him. Therefore, it must ever appear most strange that the War Department should have thought it worth while to go so far to fare so badly. One word in conclusion. Many officers hold that the sword is a superfluity and a burden on active service. This is less true of the British Army, with its various "little wars" in savage lands, than of any other. But true or false, the fiat has now gone forth, and the duty has been laid "on all armed with the sword" to "acquire facility and skill" in its use, presumably by the new method. The British infantry officer will have the respectful sympathy of the whole fencing world while studying "by command" the painful declivities of the Masiello lunge.

Die Kriege Friedrichs des Grossen. Part II.—Der Zweite Schlesische Krieg, 1744-1745.

Vol. I.—Bohemia, 1744.
Vol. II.—Hohenfriedberg.
Vol. III.—Soor and Kesselsdorf.

Published by the Military History Section of the General Staff. Berlin: Mittler, 1895.

These three volumes have been very severely handled by Captain Fritz Hoenig, certainly a very competent critic. He charges against them an irritating want of uniformity in style, no proper sense of proportion in the magnitude assigned to the various incidents recorded, and an undue tendency to magnify the exploits of the King at the price of historical accuracy. Certainly the work compares most

unfavourably in these respects with the first half of the History of the Franco-German War, and one misses the clearness and precision of Moltke's own writing, and the balance his supervision ensured in its parts. It is irritating to the last degree to find such feats as the charge of the Bayreuth Dragoons at Hohenfriedberg, and of the cavalry of the right wing (Régiments Gens d'Armes and Buddenbrock) at Soor described with a looseness and inaccuracy of expression which would hardly be tolerated from a manœuvre reporter to a second-class local news sheet; yet the work is worth struggling with, if only for the sake of the comparison it suggests between the battle leading of the period and the methods which ultimately remained to Europe as the legacy of the Napoleonic Wars, and which even now retain considerable vitality.

In Frederic's day a battle was decided by a knock-out blow; simultaneously every man, horse, and gun was concentrated on the decisive point, and the matter settled in the shortest possible number of minutes with a minimum total exposure and consequent loss to the troops engaged.

In the Napoleonic epoch, because troops lacked the discipline necessary to carry them in to decisive range at once, battles lasted for hours (except sometimes when Napoleon himself was present), and were decided by the mutual exhaustion of the combatants, the last closed reserve giving the decision. Both systems were the practical adaptation of means to an end, and in so far justified their existence; but neither can be taken as a model for universal imitation, for nowhere nowadays do the extreme conditions of either exist.

A nation disposing of unlimited resources of partly-trained men must necessarily approximate to the Napoleonic system; but in proportion as the standard of discipline and peace-training is improved, the Frederician type promises far higher results for an equal expenditure of human life.

Allowing for the increased range of modern weapons and the greater numbers to be moved, the methods seen on the German manœuvre fields tend very nearly to the practice of the old days. It is true unbroken lines of infantry with whole brigade front no longer march shoulder to shoulder to the assault, but the tendency to decide the matter by the sudden development of an overpowering fire whether of guns or infantry, and to take advantage of the confusion thus occasioned by a vigorous use of the cavalry, instead of, as formerly, the effort to wear out the enemy by a gradually reinforced skirmishing attack, is very marked indeed.

The point that experience alone can decide is, whether the material short service supplies can be depended on to bear the local strain the use of essentially line tactics involves. Frederic's infantry frequently stood up to 50 per cent. of loss in a victorious advance, a percentage rarely since equalled; but both his own troops and those of his enemy were war, not peace, trained. The matter after all is really one of relation, not of absolute figures, and the limit of resistance where both sides are peace-trained will be sooner reached on one side or the other, irrespective of the weapons employed.

It is greatly to be desired that these volumes should be translated, for they form an essential factor in the study of tactics, without a knowledge of which only the most misleading conclusions can be arrived at; but their bulk renders the undertaking prohibitive for private individuals—this is distinctly a case for State assistance.

Les Régiments d'Artillerie à pied de la Garde: Le Régiment monté de la Garde et le 23e Régiment d'Artillerie. Notice historique, par E. LITRE, Chef d'Escadron au 23e Régiment d'Artillerie. Paris: Plon, Nourrit et Cie, 1895. Price, 12 frcs.

This work is of quite exceptional interest to all students of the Napoleonic epoch, and, indeed, to those whose interest extends down into more recent times.

The regiment was originally created in 1808 by Drouot, who, together with Senarmont, forged that mighty weapon of conquest which, directed by the Emperor's genius, ensured victory whenever it made its appearance ; until the last fatal day of Waterloo, when hampered by the condition of the ground, want of endurance in its horseflesh, and opposed by a system of tactics half a century ahead of anything hitherto seen in Europe, circumstances proved too strong for it—it went down in the general disaster that overwhelmed the whole army.

The difficulty of compiling this work has been very great, for the Guard, being always employed under the Emperor's own eyes, furnished no official reports, and previous historians have had to content themselves with such indications as the summary references to the action of the arm contained in the Bulletins supplied, and when, as in 1814, these Bulletins failed to appear, it became difficult to unravel the part played by the artillery even in such well-known actions as La Rothière, Laon, Rheims, Arcis-sur-Aube, etc.

To supply the missing information, the author has been compelled to ransack all the archives of the Depôt de la Guerre, and to cross-check them by Napoleon's "Correspondance," and by the "Recueil des décrets et actes concernant la Garde et les contrôles du Corps, déposés aux Archives Administratives," and a whole host of private memoirs and biographies. The whole work has been critically examined by the Military History Section of the État-Major, and has received its *imprimatur.*

During the Franco-German War, the regiment took part in the battles of Vionville, Gravelotte, and the sorties from Metz ; whilst fresh formations raised from its depôt assisted in the defence of Paris, in the fighting on the Loire, and in Bourbaki's march to Belfort. Since the war, detachments from it have taken part in the Tunisian Expedition, 1881, and in the campaigns in Tonkin, 1885-86-87.

The Red Badge of Courage: An Episode of the American Civil War By STEPHEN CRANE. London: William Heinemann, 1896. Price, 2s. 6d.

This is, without exception, one of the most remarkable books on the psychology of war that has yet appeared. The author has taken the very soul of a young and somewhat overstrung recruit, and laid its innermost workings bare on the dissecting table. The boy, under twenty, begins by enlisting full of patriotic fervour, wrestles with the idea of what will happen to him under fire, stands bravely enough until he reads and feels indecision in the faces and minds around him, and then follows the example of the most cowardly and bolts like a hare, till distance, the sight of his wounded comrades bearing their hurts almost uncomplainingly, brings back to his mind a sense of his own shame; and then chancing on the bivouac of his own regiment at dark, goes back and fights like a gentleman for the next twenty-four hours, bearing the colours which he has seized from a fallen comrade, and winning the praise of his Colonel and all around—but conscious always of his own first weakness. He leaves the field a made soldier, and there his story ends.

The point most strongly brought out is the influence of the will of the mass over the will of the individual, *i.e.*, the power of discipline. As long as the resultant force of many wills tends forward, the weaklier men conform, not because they want to, but because they are machines obeying the master power ; but when men begin to fall rapidly the resultant will-power swings round to the negative side, and, simultaneously, all but the most self-reliant stampede.

This is the most complete justification of the methods and practices of the old close-order school:—Silence in the ranks and accurate dressing, so that the individual can neither hear nor see what is passing in the minds of those around him, and, further, of that absolute smartness in the execution of words of command, which is only obtainable when all have been trained to concentrate the

whole energy of will and body on the correct and almost instantaneous performance of the thing ordered.

This book should be in the hands of every Volunteer, for no more powerful object lesson, in the value of what he frequently considers as the dead residue of the bygone days of pipeclay and pigtail discipline, can be imagined.

Das englische Heer, einschliesslich der Kolonialtruppen, in seiner heutigen Gestaltung. Von le JUGE, Hauptmann à la suite des Kadettenkorps, Militairlehrer bei der Haupt Kadettenanstalt. Leipzig: Zuckschwerdt und Mösetke. Price, 5s.

This work reminds one of the German student's essay on the camel. The author has read an immense number of works bearing on the subject, and has carefully collated the statements they contain, only, unfortunately, he has never seen the animal itself; and this is a grave pity, for with the kindly sympathy he shows for our institutions, it would certainly have been a source of satisfaction to him to see how much better many of our arrangements work out in practice than they promise to on paper. The Germans have a proverb, *Eines schickt sich nicht für alle*, which may be freely rendered, "Circumstances alter cases," and it would be well if all our foreign critics would bear it in mind, for, after all, it is not what we know of our own defences, but the estimate our possible enemies may form of them, which decides whether to test them or not. If we possessed no colonial army and no fleet capable of safeguarding the narrow seas, doubtless we, too, should have copied with more or less accuracy the leading principles of continental nations; but circumstances being as they are, perhaps our arrangements are not so bad as they may appear to an outside critic. However, with his concluding sentence not even the most captious British critic will take exception.

"The German soldier will, however, at all times gladly recall that comradeship in arms with the sons of the Great Island Empire, which has been cemented with blood on innumerable fields from Malplaquet to Belle-Alliance—a comradeship which so recently has again been brought into prominence by the appointment of our Emperor and War Lord to the command of one of the most distinguished British regiments, an appointment received with the warmest pleasure throughout the whole German Army."

Military Letters and Essays. By Captain F. N. MAUDE (late R.E.). Kansas City, Hudson: Kimberly and Co., 1014-1016, Wyandotte Street, 1896.

This forms the first of a new military series of books now being brought out under the supervision of Captain Arthur L. Wagner, of the 6th U.S. Infantry and Instructor in the Art of War at the U.S. Infantry and Cavalry School, Fort Leavenworth. The preface indicates the purpose and extent of the book best, and is, therefore, herewith reproduced. It may be added that the proofs have never been seen by the author, and that, through an oversight of the printers, the dates of the several articles have been omitted. As a fact, they were all written between 1889 and 1891:—

"The following letters appeared (for the most part) originally in the columns of the *Civil and Military Gazette* of Lahore, and their purpose was to keep my brother officers in Bengal informed of the direction current military thought was taking in the principal armies of Europe, in all branches of the art of war, strategy, tactics, organisation, and the training of troops for war. It has always been my conviction that the essential principles underlying the employment of troops in war never change; invention may modify for a time the balance between the three arms, and an exceptional weapon in the hands of one army only, may temporarily bring about a startling change in the phenomena of the battle-field, as in 1866 and 1870, but once the equality of conditions is restored, matters revert to their former aspect with effective ranges and distances only increased.

"Thus Leuthen, Rossbach, and Austerlitz remain, and will remain for all time, types of consummate battle-leading, and a diagram of any one of these battles, with the scale omitted, will serve for any period since the fire-arm supplanted the bayonet as essentially the decision-compelling arm.

"Moreover, armament and skill on the part of the leaders being equal, victory, under all conditions of improvements conceivable in weapons, will ultimately remain with the best-disciplined troops, and by 'discipline' I understand that quality which is measured by the endurance of loss by troops under fire, having due regard, of course, to the circumstances of time, ground, and employment under which the losses were inflicted.

"No training in which this ultimate end of 'discipline' is lost sight of is worth the time wasted on it, and, reading between the lines, it will be very evident that I am far from considering that all the time spent in military training in England is employed to the best advantage. This accounts for the descriptions of field days, etc., which may appear to many to possess but ephemeral interest.

"Finally my chief object in republishing these papers has been to supply a want that from my own experience I know to exist: viz., some contemporary estimate made in peace-time of the spirit of different armies, the method of training in use in each, and the degree of efficiency they may be expected to develop on active service. Anyone who has attempted to unravel the causes which led to the defeat of the French in 1870, or the defeat of the Prussians in 1806, will, I think, readily admit of what great value half-a-dozen independent contemporary works, based on the above lines and written before the event, would have been to him.

"In conclusion, I should like to record my special sense of gratitude to Captain Arthur L. Wagner, of the United States Army, for his kindness in rescuing my manuscript from the series of misfortunes which have overtaken it since it left my hands for the mail steamer, and which have entailed a long delay in publication." F. N. MAUDE, Captain,

(Late R.E.).

The China-Japan War. Compiled from Japanese, Chinese, and foreign sources. By VLADIMIR, lately of the * * * Diplomatic Mission to Corea. With maps and illustrations. London: Sampson Low, Marston and Co., 1896. Price, 9s.

It will be many years yet before we shall be able to get at the whole truth of the recent Chino-Japanese fighting; meanwhile, we are grateful for the able though hardly impartial summary of the war "Vladimir" has given us. The following short extract, explanatory of the causes which led to the comparative inaction of the second Japanese Army after its first successes, leads us to question the author's capacity as a military critic—perhaps he understands diplomacy better. "There must, however, have been reasons that dictated a certain delay before prosecuting the campaign with vigour. After the first battles of the war, the Japanese staff must have known that they could carry on the war as they liked, and that China was a mere dummy on which they were experimenting. There were also political reasons; it was generally supposed that Japan could win only by a rush, taking China by surprise. The Japanese were resolved to explode this error by beating their adversary leisurely, and convince the world that they could win as they liked." Surely this is the most remarkable excuse for inactivity, even if such excuse were needed, ever put forward by a serious writer.

My Experiences in Manipur and the Naga Hills. By the late Major-General Sir JAMES JOHNSTONE, K.C.S.I. London: Sampson Low, Marston & Co., 1896. Price, 16s.

An exceedingly interesting account of our relations with the Naga Hill tribes and the Manipuris during the last twenty years, up to, but not including, the recent

insurrection at Manipur. The relief of Kohima, and the assault of Konoma, are incidents in our military history which deserve to be better known, unfortunately they were cast into the shade at the time by the operations on a larger scale then proceeding in Afghanistan ; but victorious fighting in which four out of nine British officers are wounded and 25 per cent. of the native troops left on the ground, is severe enough to be remembered.

The officers who took part in the assault were Sir James Johnstone himself, Major-General Nation in command, Colonel Nuttall, Major Cock, Major Walker, Lieutenant Ridgeway, Lieutenant Boileau, Lieutenant Raban, R.E., Lieutenant Forbes.

Catechism of Outpost Duty. By Captain ARTHUR L. WAGNER, 6th United Service Infantry, Instructor in the Art of War at the United Service Infantry and Cavalry School. Kansas City, Hudson: Kimberly and Co., 1014-16, Wyandotte Street, 1896.

A very handy, complete catechism in outpost and all kindred duties. The author's name is a sufficient guarantee for soundness of principle and care in preparation.

L'Armée de l'Est. Par le Colonel SECRETAN, Commandant de la IV^{e} Brigade d'Infanterie de l'Armée Suisse. (Second Edition.) Paris: Librairie Fischbacher, 13, Rue de Seine, 1896. Price, 7s. 6d.

This work is praised by both French and German critics as an exceedingly able and important history of the event attending the defence of the line of the Lisaine, by General von Werder in 1870 71.

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